

**ALTERNATIVE PROPOSAL TO THE
RELOCATION OF SCIENTIFIC AND
TECHNICAL STAFF FROM
SNOBS CREEK TO QUEENCLIFF**



DECEMBER 2008

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EXECUTIVE SUMMARY

This Alternative Proposal presented here addresses the better science outcomes, efficiency and career development criteria required by DPI. It presents a model that retains capability with a view to the future long-term requirements of the State Government, in terms of its statutory obligations to manage inland fisheries in Victoria. This alternative proposal requires the re-description of one position and a change in business operations of all Fisheries Victoria business functions that are located at and centred on the Fisheries Research Branch (FRB) at Snobs Creek.

Our Alternative proposal will increase FRBs ability to attract funding; improve leadership of freshwater R&D activities; simplify communication and coordination across programs; maintain and enhance our reputation as a freshwater research centre of excellence; improve career opportunities though providing a stable, attractive and developing workplace; and provide better opportunities to work with the tertiary education sector.

In comparison with the DPI relocation proposal, our alternative is less risky, and will be more efficient. It is simpler, less disruptive, cost-effective and maintains fair and reasonable treatment of staff.

INTRODUCTION

For over 50 years the State Government's iconic facility at Snobs Creek has been a focal point for freshwater fisheries and aquaculture research, fish production and education in Victoria. It has historically played a key role as the interface between the Victorian Government and stakeholders in regional Victoria by effectively servicing the needs of recreational anglers, aquaculture farmers and the wider community.

In many respects "Snobs Creek Research Station and Fish Hatchery" is unique, particularly in terms of the infrastructure on-site and the multiple functions that are undertaken there (Appendix I). The contribution of Snobs Creek over the years to fisheries and aquaculture science and management at State, National and International levels has been substantial. The success of the research program to-date is a result of the intrinsic links between scientists, fish production and the existing infrastructure, location and facilities of the site.

On 5th August 2008, the Department of Primary Industries (DPI) announced its intention to restructure its workforce and facilities. With respect to the Snobs Creek site, DPI have proposed that staff of the Fisheries Research Branch (FRB) of Fisheries Victoria (including the Freshwater Discovery Centre staff) be relocated to Queenscliff to: "create critical mass and improve scientific leadership in the aquatic science area". This announcement came without any justification or business case. The only full time Business Services Officer at the site has already been redeployed undermining the capacity of officers at the site to function productively.

FRB staff believe that to close the research facility at Snobs Creek at a time when our freshwater resources are facing unprecedented challenges from the most severe drought on record plus climate change will restrict the ability of Fisheries Victoria to make informed management decisions about the industries and resources that they have a statutory obligation to manage. Advice to Government will therefore ultimately be compromised.

Some of the unique attributes of this site which make the recent decision to remove the R&D function appear ill-considered and short-sighted include:

- Location – Snobs Creek is located in the heart of the most important recreational fisheries and inland aquaculture industries in Victoria.
- Infrastructure – the aquaculture research facilities, laboratories, office buildings and equipment are modern and functional and specific for the purpose that they are used for and should be regarded as a state asset, rather than moth-balled. As recently as 2000, \$3 million was spent modernising the offices and \$2 million was spent on aquaculture research

infrastructure as part of the Our Rural Landscapes Initiative (2002-06). There is also considerable room for expansion at the site.

- Existing “brand” and reputation – staff are highly regarded in the aquatic science field and are regularly asked to address or attend meetings and collaborate in multi-disciplinary projects. The staff maintain strong links with other researchers and institutions where this is often reflective of its regional setting.
- Role in education - the Snobs Creek facility provides educational opportunities for high school, TAFE, and University students as well as providing international training.

Staff at Snobs Creek have historically been very receptive to structural changes implemented by DPI and its many predecessors. The most recent of those was the removal of the researchers then in “MAFRI” from Fisheries Victoria to Primary Industries Research Victoria (PIRVic) in 2003/04. This major structural change was embraced by Snobs Creek staff (as it did not involve physical relocation) and they went about improving their already established networks within the wider department and very successfully translated these contacts into significant cross-divisional projects. The rapid demise of the PIRVic experiment resulted in the researchers being re-integrated back into Fisheries Victoria in 2007. Again, Snobs Creek actively engaged with Fisheries Victoria and the Integration Project to ensure that the transition was smooth and mutually beneficial on the stated understanding (by the ED Fisheries Victoria, at a meeting at Snobs Creek where he unveiled the new FV/FRB corporate structure) that it would be protected from subsequent attempts to break up or “pick off” the research unit. Less than one year later, came the announcement that DPI intended to relocate the Snobs Creek research team to Queenscliff.

The removal of FRB staff from Snobs Creek will have a severe impact on the groups’ ability to conduct freshwater fisheries and aquaculture research. Disconnecting the Freshwater Discovery Centre (which is essentially the public face of Fisheries Victoria) from any onsite R&D activities will make it less relevant and without regular updates and contributions from on-site contemporary research will further reduce tourism and education opportunities which currently serve to inform the Victorian community about freshwater fisheries and aquaculture. There will be substantial flow-on negative effects that will directly impact the Victorian recreational angling and freshwater aquaculture sectors as well as the local communities of Alexandra and Eildon.

The Alternative Proposal presented here not only addresses the better science outcomes, efficiency and career development criteria required by DPI, it

presents a model which retains capability and meets the future long-term requirements of the State Government with respect to its statutory obligations to sustainably manage inland fisheries in Victoria.

IMPACTS OF THE PROPOSAL

The proposal to relocate 11 FRB staff from Snobs Creek to Queenscliff will have far reaching implications for both the future of inland fisheries and aquaculture research; staff and their families and the local communities of Alexandra and Eildon.

1. Future of inland fisheries and aquaculture research

DPI maintain that staff will continue to work in their area of expertise from Queenscliff. FRB staff do not think that this is a realistic proposition as the move will inhibit the research section's ability to maintain a strong freshwater focus and the staff will eventually be absorbed into marine projects. The increased cost of doing equivalent freshwater research from Queenscliff will make obtaining funding to maintain service delivery increasingly difficult. The portfolio of work will reduce and the increased distances to field-sites will mean that existing field-work will become more arduous, and harder to maintain an acceptable life-work balance. Individual researchers will find 'assisting' on marine projects or transferring to marine-based positions as they occur, a much more attractive prospect and will naturally seek these opportunities to maintain job-satisfaction.

In addition, FRB staff will lose their identity as the only dedicated research team working on inland recreational fisheries and aquaculture technologies for trout and native species. This proposal will have severe consequences for future research funding and relationships with stakeholders. In the long-term, the increased cost of providing a reasonable level of R&D for freshwater fisheries and aquaculture will reduce the flow of investment into the freshwater sector. This lack of freshwater investment will compromise the capacity of Fisheries Victoria to make informed science-based decisions to effectively service its statutory obligations. This will result in increased risk of a major 'market' failure in the freshwater environment/ fisheries area (i.e. through information failure) (Anon Draft, 9 April)¹.

2. Impacts on staff and their families

The distance between Snobs Creek and Queenscliff is 250km, meaning that staff will have to up-root their families from their communities to continue to work with DPI. The proposal to relocate 11 staff to Queenscliff actually involves the relocation of 33 people from the Alexandra/ Eildon area (including 8 partners and 14 children). Some of these children are at crucial points in their education (VCE years) and moving them from a country to an

¹ Anon (Draft, 9 April) Department of Primary Industries Agriculture and Fisheries Four year Strategy 2008-2012. (Ed. DPI). (DPI).

urban school at this time is not an option if it means jeopardising the last two important years of schooling. At least three families will be physically split with one partner remaining in the Alexandra/Eildon area due to employment commitments.

FRB staff will be severely financially disadvantaged by the proposed move as there is a large difference in property costs between the two areas. Average house prices in the Ocean Grove/Bellarine Peninsula area are around \$200,000 more than in Alexandra. Average rents are \$50-60 more per week. Assuming that they are able to sell their existing homes, staff will have to take on additional debt of the order of \$100,000-200,000. In these uncertain economic times staff do not think that this is reasonable expectation and could cripple families financially for decades. In addition, many senior staff will not get a mortgage to cover the additional expenses associated with relocation to the Bellarine Peninsula. DPI's lack of willingness to commit to a 'TAC style' package for even these few staff (n=11) in an attempt to retain their corporate experience shows disregard for the department's own values of 'respecting others', and 'working together' and its supposed 'family friendly' policy.

3. Impacts on local communities

The impact will affect the social fabric of this community by depriving local sporting clubs of keen participating members (i.e. football & netball club, cricket club, local gymnasium, swimming club, racing club, golf club etc.) at a time when many of these institutions are struggling to retain members and maintain their essential role as the social capital of rural communities (Tonts 2005)². This loss of resources, social capital, and skilled professionals will hit this rural community hard and will be felt through social-networks, small businesses, and across the health and educational service sectors. This relocation proposal is clearly at odds with the State Government's public commitment to regional towns.

4. Summary

Given the substantial impacts on families, research capability and local communities outlined above, one would expect that DPI would have robust justification and a detailed business case to underpin their proposal. Indeed FRB staff are expected to provide this type of basic information even to attend a conference. The actual rationale provided by DPI is critiqued below. No business case has been presented to CPSU or staff (despite being requested on numerous occasions) indicating that either:

² Tonts M (2005) Competitive sport and social capital in rural Australia. *Journal of Rural Studies* **21**, 137-149.

- no cost-benefit analysis has been done by DPI, or
- DPI is aware of the increased cost and associated risk to Victorian freshwater fisheries, and is prepared to fund it to compensate.

If the latter option, there is no clear rationale why such additional investment could not be re-directed into maintaining and improving the existing program of R, D & E at Snobs Creek. The proposed relocation is an unfair and unreasonable extent of change to the business, and for the personnel involved given the clear lack of business/financial justification.

CRITIQUE OF THE RATIONALE / INTENDED BENEFITS OF THE PROPOSAL

The rationale for the relocation as presented by DPI highlights how little DPI understands about the nature of freshwater research. FRB staff contest that there is no valid rationale for the move and counter that it is in the long term interests of the Department to not preserve the capability and identity of a dedicated freshwater research section.

In order to respond to dynamic political and environmental challenges, Fisheries Victoria needs a diverse, flexible and adaptive freshwater research group to minimise the risks to service delivery. This is best served by maintaining the integrity of the inland research group at its own location rather than consolidating with un-related staff at the one location. A point-by-point critique of the rationale provided is given below:

1. The ability to attract funding, and attract and retain staff is enhanced

Interpretation

We interpret this statement to mean that DPI management believe that FRB staff at Snobs Creek have not been able to attract funding or retain staff as well as they could if they were already located at Queenscliff.

Comments

This rationale is refuted because Snobs Creek has historically been very successful in attracting funding. An annotated list of the projects undertaken by the group in recent years is in Appendix III. This clearly demonstrates that FRB staff have a good track record of attracting funding from a wide range of sources. Indeed, all Snobs Creek research staff are fully funded. The proposed relocation to Queenscliff will undermine the existing Snobs Creek “brand” and detrimentally impact on staff’s ability to attract funding.

Staff attraction and retention has not been a problem historically at Snobs Creek, with all of FRB senior staff being at the site for longer than 10 years—some for over 20 years. As would be expected the more junior staff have been here for a shorter period as they were only recruited recently. Indeed, two recent staff recruitments were attracted to their positions precisely because they were located at Snobs Creek and this suited their lifestyle.

Case study 1: Employee A – Senior Technical Officer, Snobs Creek

Recruited in August 2008 to the position after gaining valuable experience as a technical officer and senior electrofisher at NSW Fisheries in Narrandera.

Employee A's family are from Corowa and he relishes the outdoor life, spending most of his spare time trout fishing or deer hunting in the north-eastern Victoria and the Goulburn Valley.

Case study 2: Employee B – Technical Officer, Snobs Creek

Recruited in March 2008 after working for DSE in Wangaratta, Employee B's family are from Wangaratta, and he relished moving to the Snobs Creek position as he also enjoys the outdoor sporting life of hunting and fishing. His partner works in the local primary school and he still maintains sporting connections to Wangaratta though a local football club, playing for the Wangaratta Magpies.

FRB staff can demonstrate that the site has no problem attracting staff to Snobs Creek. Conversely there is an evident problem with attracting staff to Queenscliff. For example, there has been a failure to fill the existing vacant senior manager positions; and also in retaining staff at Queenscliff³. Temporary placement of head office staff to these unfilled positions is a stop gap measure and moving staff from Snobs Creek to Queenscliff will not rectify the lack of scientific leadership that currently exists across the whole of FRB.

Ironically, the biggest impediment to staff retention currently is the relocation proposal where staff who will not, or cannot, move to Queenscliff will be forced to leave DPI as no other alternatives have been offered. The Queenscliff site, lack of facilities, working conditions including travel distances to study sites etc, are just not attractive or practical for many staff and will make the work less attractive for future recruitment.

Conclusion

FRB at Snobs Creek has demonstrated its ability to both attract funding and attract and retain staff from their present location. This section has drawn a comparison between Snob's Creek retention and Queenscliff retention to show how the relocation will detrimentally impact upon FRB staff retention

2. Leadership of research and development activities is better coordinated in one location, communication is

³ Recall of recent resignations suggests that at least 4 science and technical positions have been vacated voluntarily

enhanced and coordination of effort requires less intensity.

Interpretation

We interpret this statement to mean that communication and co-ordination is just too hard and inefficient when spread across two sites. The new organisational structure (where three program managers were reduced to two – both based at Queenscliff) in FRB is failing and that this will be fixed with the relocation. Also that existing Queenscliff-based management are overwhelmed by the additional management-load of the Snobs Creek based freshwater program.

Comments

The rationale is refuted because at FRB, project management is coordinated through networked-databases containing information describing projects, project finances, and cataloguing the development of science-outputs. Snobs Creek and Queenscliff share common access to these databases. Both sites have good phone, fax and email communication and a fast broad-band connection. Both sites are now equipped with video conferencing facilities, and if need-be, Snobs Creek staff have always shown willingness to travel to face-to-face meetings. The only barrier to increased communication is the recent disengagement of senior-management from the FW R&D program.

The new management structure in FRB was implemented earlier in 2008, specifically removing the leadership position from Snobs Creek. Since then there has been very limited face-to-face interactions between FRB scientists and their supervisors at Snobs Creek. Indeed the first visit to the site by the Research Director to talk to staff about their work occurred on 27th November 2008, 6 months after his appointment. At that meeting it was generally agreed that the needs of inland research were “falling under the radar” as there is no process for engaging Snobs Creek staff and their interests are not being communicated effectively to management (delays in processing staffing authorities, lack of research planning discussions, etc).

Also lack of leadership is an issue across FRB, not just Snobs Creek. A failure to recruit scientific staff to Queenscliff to fill the existing vacant manager positions has resulted in poor leadership as practically all managers are in acting positions. If these positions were filled and the incumbent personal conducted their required duties, then leadership, communication and effort coordination can be accomplished at numerous sites. Whether at one-site or two, the same amount of management tasks (e.g. administrative approvals, project planning discussions, performance management conversations, science quality reviews of outputs, etc) are going to be required of whomever,

manages the R&D. The current lack of FRB management is due to the reduction and consolidation of management positions, not the presence of two work locations.

Conclusion

Co-ordination of R&D and communication activities can actually be enhanced by re-instating the leadership position at Snobs Creek to provide real freshwater program management, effectively lobby for the interests of inland researchers, and re-focus FRB management attention on the work done at Snobs Creek.

3. Maintaining state and national relationships is enhanced through one centre of excellence for the state

Interpretation

We interpret this to mean that DPI believes that the current relationships maintained by FRB could be better if FRB staff were located at Queenscliff. It is unclear in which field of research a combined Snobs Creek and Queenscliff Centre would be a “Centre of Excellence”.

Comments

Snobs Creek currently maintains strong and active relationships with other research institutes, universities and resource management agencies on state, national and international levels. Appendix IV lists the collaborative arrangements currently in place. We believe that these relationships are developed and maintained by our current unambiguous freshwater research focus as well as staff expertise and the unique site infrastructure.

The clear freshwater focus would be lost in a move to Queenscliff thus the ability to maintain relationships would be diminished rather than enhanced. Canvassing opinion amongst these research collaborators has revealed an attitude of dismay at the idea of moving our FW R&D to a coastal location. Most would perceive a ‘centre of excellence’ as an area where some specialisation exists (e.g. FW fisheries research and aquaculture, centred around a unique facility) rather than a general ‘marine science institute’, as would exist if we were relocated to Queenscliff.

Our current state and national relationships are not with or through Queenscliff but in locations outside of DPI’s jurisdiction hence making redundant the theory that a single location is required for better collaborative relationships.

Conclusion

State, national and international relationships are enhanced by FRB being located at the two existing locations with clear distinct and specialised fresh and salt water focuses. Our current state and national relationships (listed in Appendix IV) are not with or through Queenscliff but in locations outside of DPI’s jurisdiction hence making redundant the theory that a single location is required for better collaborative relationships.

4. Research is more efficient, there is less duplication of effort and greater opportunities to share information and ideas.

Interpretation

This statement is interpreted to mean that DPI thinks that FRB staff at Snobs Creek are inefficient in undertaking research, are duplicating R&D that is done at Queenscliff and do not currently share ideas and information with their Queenscliff counterparts.

Comments

There is a clear distinction between the work conducted at Queenscliff which is focussed on the marine environment and the work conducted at Snobs Creek which is focussed on inland areas. Very specialised skills are required in both areas and there is actually no significant duplication of effort over the two centres. There seems to be a perception that fish related R&D is the same in marine and freshwater environments. That is not the case and shows a complete lack of understanding of the research carried out by FRB. Fisheries research in freshwater environments uses different sampling gear, requiring different skills and training; it is generally on fish stocks that are spatially structured and variable across a patchwork of locations; the species are different and ecosystems are driven by and affected by different processes.

Freshwater research is likely to reduce if relocated to Queenscliff as it will become more expensive to fund and arduous to perform (freshwater fisheries researchers will have to travel considerable distances to project sites and aquaculture scientists will have to source alternative facilities to conduct their work – the nearest likely option being Warrnambool, which is as far from Queenscliff as Snobs Creek is!)

Conclusion

There is currently no duplication of effort or barrier to sharing information and ideas between scientists at Queenscliff and Snobs Creek working in similar areas and therefore this statement does not justify the relocation proposal.

5. Ease of multidisciplinary interactions to tackle complex problems

Interpretation

We interpret this rationale to mean that DPI believes that FRB scientists at Snobs Creek have difficulty-with, or do not already engage in, tackling large complex problems.

Comments

FRB scientists from Snobs Creek and Queenscliff presently work extensively together and with off-site collaborators to develop and implement projects to tackle complex problems (e.g. Murray-Darling wide fisheries projects, tropical invasive fish project, Biometrics, software and model development, GIS, Fisheries training into Asia). This will not be improved with relocation to Queenscliff as few (if any) of our collaborators are located there. Strong ties with other disciplines related to inland water resources, biodiversity, ecology, macro-invertebrates and modelling etc are required to tackle complex problems in the freshwater environment and these are not found at Queenscliff.

Conclusions

Multidisciplinary interactions to tackle complex problems will not be made any easier with relocating to Queenscliff.

6. Career opportunities are enhanced by having a larger workforce in one location. Learning and development opportunities are improved through mentoring opportunities with greater number of people at one location.

Interpretation

We interpret this to mean that DPI believes that career opportunities are presently limited by being located at Snobs Creek, and that increasing mentoring opportunities for these staff is the best way to improve their career opportunities.

Comments

Learning and development opportunities within DPI are available to all staff on request and as appropriate. This will not change with the relocation to Queenscliff.

Career opportunities are enhanced by having a staff-structure, and training opportunities that allows staff to progress in their chosen career. The existing science-career progression structure within DPI will not change as a result of the proposed relocation, or by merely locating Snobs Creek staff as part of a larger workforce.

Mentoring is only one type of training style that can be useful, particularly when a person requires coaching to overcome reluctance or inability to complete new tasks. DPI's own "Learning Through Mentoring Kit"⁴ emphasises that mentoring can be achieved effectively through phone and email and mentor and mentee do not have to be at the same site. Other training methods can be just as useful and can be better practiced at a distance; supportive or delegation based training can be equally effective with staff that are ready, willing and able to perform a task. Any training style can be carried out at a distance with effective communication.

The delegation training style is rarely used as a career enhancement opportunity at FRB—in general FRB staff at Queenscliff or Snobs Creek are rarely considered for acting or higher duties positions. An example is the currently vacant leadership positions in FRB – instead of giving scientists the career development opportunity, policy staff were "parachuted" in from Spring Street.

⁴ DPI, Learning Through Mentoring Kit, 2007 available at [http://primarysource/dpi/dpinav.nsf/v/9D920D7D24828397CA2574F50081076F/\\$file/Learning%20Through%20Mentoring%20Kit.pdf](http://primarysource/dpi/dpinav.nsf/v/9D920D7D24828397CA2574F50081076F/$file/Learning%20Through%20Mentoring%20Kit.pdf)

A recent example of a high-impact training opportunity that was independent of work-location came from a visit to Snobs Creek from Dr. Mike Allen on a DPI Visiting Scientist Scholarship. Mike's visit was motivational and raised the skill-level of a number of research staff at Snobs Creek by collaboration, coaching and developing a working relationship that has lasted long after the few weeks of the visit. Mike's visit was organised, arranged and hosted by regional staff, including most significantly, the researchers at Snobs Creek.

Conclusions

Relocating staff from Snobs Creek to Queenscliff will not improve the career opportunities for those staff. They will not be any better qualified, or experienced than they presently are and any improved prospects for 'mentor mediated training' could be adequately compensated for in other ways at their existing location.

The relocation proposal diminishes career opportunities for FRB Snobs Creek staff within DPI as some of the staff will be forced to look elsewhere for work.

7. There are IT infrastructure and facilities cost efficiencies of maintaining one laboratory, these savings can be directed towards better equipment and salaries for research staff.

Interpretation

We interpret this to mean that DPI believes it will reduce the overall cost of IT infrastructure and facilities and that the function of the laboratory at Snobs Creek can be seamlessly transferred to Queenscliff.

Comments

DPI knows that the costs of IT infrastructure and services are charged DPI-wide per user with access to a computer. This is known as the PC-levy, standard operating environment (SOE). This varies with whether the user has a laptop or desktop-PC, but FRB will not get any discount per head of staff with the relocation of staff to Queenscliff.

Despite the proposed relocation, the Snobs Creek staff will still require a similar fleet of vehicles (6 cars and 4x4's), the same number of PC's, and the same boats (4 trailer boats, and 2-4 roof-toppers), and equipment (currently filling a 15m x 30m shed) to do the required job. This will need more storage facilities than currently exist at Queenscliff – meaning that extra storage

facilities will need to be built or leased at that site –incurring more unnecessary expense.

The laboratory at Snobs Creek is used for the analysis of freshwater samples and it is a mistake to think that this analysis can be carried out at the Queenscliff laboratory. Recently a major project on the Bellarine Peninsula run by a Snobs Creek staff member using Queenscliff staff tried to have freshwater samples analysed at the Queenscliff lab and was told it was not possible. The samples ended up being sent to a commercial laboratory in Geelong or the State Chemistry Laboratory at Werribee.

Without a significant re-build, the existing facilities at Snobs Creek will not simply be able to be shut-down if fish-production remains at the site as planned. The removal of FRB staff will not result in the closure of the Snobs Creek laboratory as it is still required for fish production. The existing meal-room and bathroom facilities would also need to remain open (part of the main office building) to service fish-production staff remaining at the site. Workshop facilities would need to be retained for the same reason.

If alternate arrangements for these facilities are to be made at Snobs Creek for the remaining staff, this will entail extra expense.

Conclusions

It is by no means clear where the proposed infrastructure cost efficiencies can be made, or in fact what would be the scale of any efficiency savings, when weighed against the infrastructure re-structuring costs that will be required to relocate the FRB staff as proposed. As DPI could not present a business plan on request, we assume that they do not know either.

8. One location provides greater opportunities to develop influential relationships with Universities

Interpretation

It is unclear what an “influential” relationship is. We interpret this rationale to mean that DPI thinks that one site at Queenscliff would mean more to Universities than two sites. In essence, that those universities would judge us by size rather than the skill, experience and professional reputation of the staff.

Comments

This rationale is refuted because when engaging with universities it is not the size of the institute but the research project focus, the skill and experience of

the staff, and the infrastructure and facilities of the site that are the most important aspects. We believe that the Snobs Creek site has greater adaptability of facilities, support from other FV programs, on-site security and that this makes it the more attractive of the two sites to university research. We believe that to build influential relationships with Universities, we must first engage in more involvement with university research. Moving staff from Snobs Creek to Queenscliff decreases the ability of FRB to attract freshwater focussed university research projects and thus *decreases* FRB's ability to develop relationships with universities. Snobs Creek has demonstrated the ability to create and maintain relationships with Universities. Snobs Creek has successfully developed relationships with several state, interstate and international tertiary institutes. This demonstrates that offering the universities opportunities to develop marine or freshwater centred research relationships has remained a consistently attractive arrangement.

Relocating to Queenscliff will not increase our ability to attract students to base their research projects with FRB. Students will go where their interests take them, as long as not too many obstacles are placed in their way (e.g. high cost of living etc). Students interested in freshwater based research projects will be more attracted to working at Snobs Creek than Queenscliff, because of its unique facilities (e.g. ponds, raceways, tanks, streams) and location (i.e. adjacent to major recreational fisheries, and a variety of freshwater stream, lake, wetland, and terrestrial ecosystems); while those wanting marine based projects will continue to look at Queenscliff for its unique features. Indeed, Snobs Creek has an advantage in its ability to offer cheap on-site accommodation, (e.g. visiting researchers and students have recently been accommodated cheaply and happily in on-site government owned houses) and therefore a low cost of living to students interested in FW research.

Conclusions

One location decreases the appeal of FRB to universities as it limits the types of engagement, especially research with a freshwater focus. The continuation of two sites increases the appeal by offering both fresh and saltwater based research opportunities. As a research location for students interested in freshwater research in SE Australia, Snobs Creek has no equal.

THE ALTERNATIVE PROPOSAL

The Alternative Proposal presented here addresses the better science outcomes, efficiency and career development criteria required by DPI. It presents a model that retains capability with a view to the future long-term requirements of the State Government in terms of its statutory obligations to manage inland fisheries in Victoria. This alternative proposal requires the re-description of one-position and a change in business operations. It is simpler, less disruptive, cost-effective and maintains fair and reasonable treatment of staff.

Experience has demonstrated that Snobs Creek Research Station and Fish Hatchery functions most productively and efficiently when all of the functions on site are integrated and are working to a common plan. The fragmentation of business units on site began with the “out-sourcing” of fish production to a private operator in 1995 (although this was reversed in 2005) and has continued until the present day with all businesses on site reporting through separate management lines (Appendix II).

The alternative proposal developed by FRB staff shows that staff should remain located at Snobs Creek. However, FRB staff offer the following proposals for change in order to build on the strengths of the current operations. This proposal reinforces the fact that DPI's criteria can be fulfilled without relocation. In fact, they show the importance of the current location OR that location is irrelevant to the issue at hand.

Changes that need to occur include:

- **The appointment of an “Officer in Charge” to oversee all functions at the site and provide leadership and integration in both freshwater science and management.**
 - ❖ This person should be given the specific task of improving science outcomes, efficiency and career development for staff, as discussed in detail below.
 - ❖ Historically, Snobs Creek has hosted a senior manager/executive who oversaw the whole site and this worked extremely well. Indeed until recently the senior manager at Snobs Creek had a seat on the FRB Management Team and regular access to the Fisheries Victoria Executive Team. Ideally this position should be part of the Executive Team. This leadership position was only removed from Snobs Creek earlier in 2008 as part of the new FRB structure (where three program managers were reduced to two - both based in Queenscliff) The relocation proposal therefore suggests that DPI intends to disrupt good research in order to compensate for a bad leadership plan, rather than

providing leadership where it is needed. The proposal to relocate science staff to Queenscliff shows that this model is clearly not working as the workload for the two program managers is overwhelming and freshwater research has “fallen off the radar” of FRB management since its implementation.

- ❖ Leadership of FRB freshwater staff will not improve with relocation to Queenscliff as ALL of the key leadership positions (presently at Queenscliff) are currently vacant or occupied by people in acting roles with no freshwater science experience.
 - ❖ It makes more sense to create one position at Snobs Creek rather than relocate 11 staff (33 people in total) to Queenscliff. Leadership will be improved with an on-site “Officer in Charge” that actively represents the interests of freshwater research staff.
- **Re-integration of all site functions (fish production, Discovery Centre and research) so that each area can benefit from the outputs of the other.**
 - ❖ This will increase accountability of all staff at Snobs Creek, all of which are currently managed remotely through several reporting lines.
 - ❖ Re-instate the connection between fish production, research and Discovery Centre for better outcomes from all business units.
 - ❖ Re-invent the Discovery Centre as the “Shop Front” of Fisheries Victoria to disseminate information to the public. Increase involvement with the Advocacy Unit of Fisheries Victoria whose role is to influence other agencies to take fisheries outcomes into consideration.
 - ❖ Invest in the centre as an educational resource that could be involved in school, TAFE and University curricula and play a central role in new Fisheries Victoria initiatives (such as the *Go Fishing in Victoria* Initiative).
 - **Put the research team in a position to adapt and capitalise on emerging opportunities in the aquatic science area.**
 - ❖ Capitalise on collaborative linkages to develop projects that will assist FV to sustainably manage and monitor Victorian fisheries.
 - ❖ Encourage other Agencies to utilise existing facilities on site to undertake external research. Develop Snobs Creek site as a research park that provides infrastructure, security and controlled conditions for analytical research (e.g., ponds, streams, tanks raceways, aquaria, laboratories, controlled-environment rooms).

- ❖ Strategic planning that identifies a clear vision for the FRB research team that utilises existing capabilities in these new relationships and identifies capability gaps;
- ❖ Give researchers the support to investigate future opportunities and position their team to capitalise on them.

ACHIEVING DPI OUTCOMES

Achieving better science outcomes

The ability to achieve “better science outcomes” has been highlighted by DPI as one of the key criteria against which the Alternative Proposal will be assessed. However, the science outcomes that we are striving to achieve must first be defined and the current process for achieving them must be identified before an assessment of improvement can be made.

Defining science outcomes

FRB staff argue that the high quality science outcomes may be characterised by:

- **Research is relevant to the needs of stakeholders and recognised as being authoritative.**
- **Leads to practice change in fisheries management.**
- **Funding agencies are keen to re-invest.**
- **Staff are proud of their work, engaged, productive and feel valued.**
- **Reputation is positive and increased in strength – brand building.**
- **Increased career opportunities attract and retain experienced staff.**

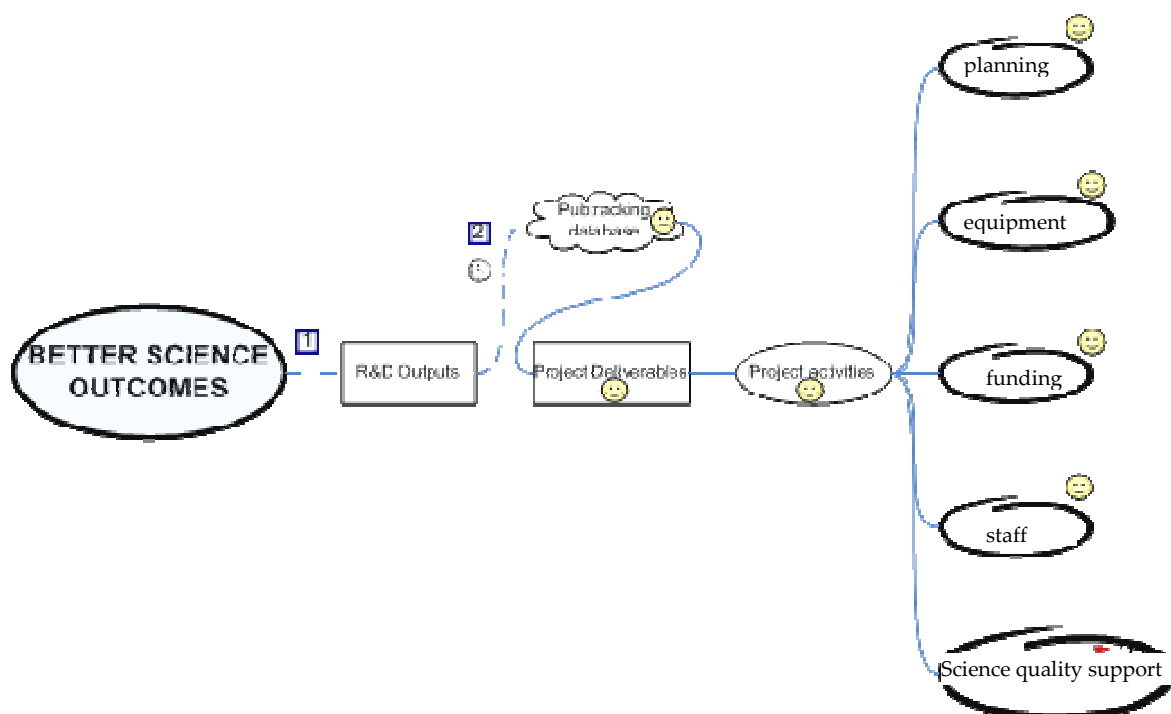


Figure 1. Process for achieving science outcomes in FRB showing the basic components on the right and identifying the current strengths and weaknesses in the chain of processes that lead to better science outcomes.

Figure 1 shows the current process for achieving science outcomes in FRB. All work conducted at Snobs Creek is done through projects that are funded by Fisheries Victoria and/or a variety of other funding Agencies. The diagram shows where we are currently performing well and highlights areas that need improvement to deliver better science outcomes. Key messages to take away from this include:

What we are doing well 😊

- Planning–Staff at FRB consistently produce high quality outputs relevant to stakeholders and funding agencies. With a few exceptions, project outputs are delivered to supervisors on time and budget.
- Equipment–The 50+ years of inland aquaculture and freshwater fisheries research at the site has lead to a build up of capability, experience, equipment, reputation and infrastructure that is unique.
- Funding–FRB staff at Snobs Creek are currently fully funded with no staff unfunded or on transition funding. Historically the group has been very successful at attracting funding for their research.
- Staff –At Snobs Creek there has never been a problem with attracting staff to work here. As of 5 August 2008, FRB positions at Snobs Creek were all filled and all projects were fully staffed.

What could be done better

- Science quality support– In the last three financial years FRB Snobs Creek staff have authored or contributed as authors to 75 publications (source, DPI PubTracking database) including many peer reviewed articles in international research journals. FRB staff at Snobs Creek have been invited to collaborate on international as well as national collaborative research programs. FRB staff at Snobs Creek routinely use Queenscliff or Melbourne based biometric services in their work and until recently presented the ‘highlights’ of their work annually to DPI’s Chief Scientists where the group always received positive feedback, encouragement and practical suggestions. FRB staff at Snobs Creek have extensive networks at local, state, national and international levels. They have well established links with Universities in Australia and overseas. They have also been actively involved in multi-disciplinary project teams in DPI. Improved

science quality support would make a difference in project development, and encourage the conversion of more research outputs to peer-reviewed articles in the international research literature. However, moving to Queenscliff will not resolve this as the position of Leading Practicing Scientist has not been filled and even if it had it is unlikely that this person would have inland experience. The most important improvement in science quality at Snobs Creek recently was the input of a visiting scientist, Mike Allen (University of Florida) who raised the bar of research for the freshwater fisheries team. More interactions of this nature would be of immense benefit to the research program as would an on-site “Officer in Charge.”

- The Pubtracking database is a very worthwhile tool, but is currently a major impediment to turning project outputs into outcomes. The database is currently under review after its shortcomings were identified from staff feedback. Some staff have had project reports take up to 5 years to be approved by the system. Commonly, by the time the report has been approved it is out of date and no longer useful. This creates a perception that the scientists are not performing, whereas in actual fact they are being let down by the bureaucratic system in place.
- Turning R&D outputs into better science outcomes. This is a major issue that needs to be tackled regardless of the location of staff and will be explored in detail below. Most of the issues revolve around project design, collaboration, and peer-review; and none of these are significantly improved or made easier by relocating staff to a single site. Ideas (proposals) and documents are presently circulated electronically on databases, and the locality of the persons working with either is largely irrelevant. We would argue that turning R&D outputs into better science outcomes will be easier to achieve from Snobs Creek as stakeholders recognise “the brand” and know what we do. If we were integrated into Queenscliff we will essentially lose our unique identity which will reduce our capacity to improve science outcomes.

Turning R&D outputs into science outcomes

Issues listed here are pertinent whether FRB is located at one-site or two and are listed here as they are generally relevant for improving the working model for the integration of FRB within Fisheries Victoria.

Assuming that the Pubtracking database problem is a temporary issue that can be resolved in the short to medium term, the primary issue that needs to be tackled is how to turn the outputs of our R&D (papers, reports, IP,

knowledge etc) into science outcomes. This task is bigger than just the FRB staff at Snobs Creek and will involve all stakeholders co-operating in a number of stages.

Figure 2, illustrates a summary of the present process for turning R&D outputs to science outcomes and highlights areas where this should be improved.

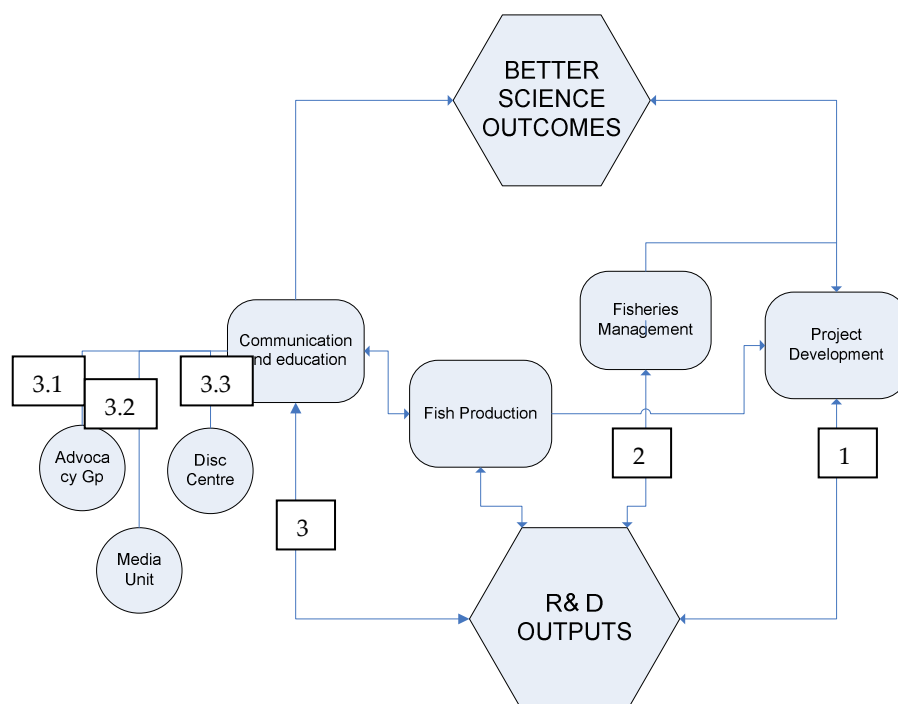


Figure 2. The process for turning R&D outputs to science outcomes with numbered areas marked for improvement numbered and annotated in the text

In terms of the science outcomes that were defined earlier, the stages involved in improving science outcomes are as follows:

1. **Ensuring R&D Outputs are relevant to stakeholders and funders.** This is intrinsically related to the project development process undertaken prior to project implementation. Projects should be aligned with the R&D strategy of Fisheries Victoria and/or other funding agencies. However, there should also be a process for developing projects to investigate short-term requirements such as those that arise from the Cons process. FRB scientists also need some flexibility to explore new areas of interest (perhaps through environmental scanning and meeting with networks) so that the group can position itself for future opportunities.
2. **Interaction with Fisheries Managers.** Recent experience suggests that FV knowledge of FRB processes and timelines could be better. This has resulted in unnecessary tensions between teams who should be working

constructively and co-operatively together. Projects need to be developed with fisheries managers and all parties need to be engaged for the duration of the project. An important way of improving science outcomes is for groups that often commission the work to be interested in and educated by the results – even if they have moved on to the next “hot issue”. Fisheries managers could improve science outcomes by incorporating R&D results into their management arrangement (practice change in Fisheries Management).

3. **Communication of outputs and results.** This is a key area for improvement. Outputs from R&D projects need to be more effectively disseminated to fisheries managers, other researchers and the community in general. Apart from the standard methods of final report production, scientific papers and conferences, key roles in this process include:
 - 3.1. **Discovery Centre.** A re-vamped Discovery Centre could play an important role in disseminating R&D outputs by providing an aquatic science educational role for schools, TAFEs and Universities, interpreting FRB Science outputs for the general public and acting as the ‘shop front’ for FV on FW issues (e.g. promoting the *Go Fishing in Victoria* initiative)
 - 3.2. **Advocacy Goup,** Fisheries Victoria. This group could play an important role in disseminating FRB Freshwater Fisheries Research and Aquaculture R&D outputs to CMAs and other environmental groups. It could also act as the point of input for R&D-needs coming from these environmental groups to provide feedback to the project development process that would enhance and broaden the relevance of R&D projects. (e.g. Fish biodiversity survey needs of CMA’s, or requirements to evaluate the fish-related aspects of the CMA’s habitat management programs)
 - 3.3. **Media Unit.** The Media Unit needs to be more actively engaged in disseminating R&D outputs.

Efficiency of operations

The Alternative Proposal will result in increased efficiency of operations compared with the other option of relocating to Queenscliff in the following ways.

Localised management

The creation of an Officer in Charge position at Snobs Creek who oversees all staff on-site will result in substantial efficiencies in all businesses. Currently, staff are supervised by DPI staff in Queenscliff, Knoxfield and Spring St and there is considerable traffic by supervisors and staff in both directions.

Localised management would create efficiencies in decision making and accountability and is a more practical and focused approach to supervising staff.

Cost of Service Delivery

If the alternative proposal is implemented the cost of service delivery will remain the same or decrease due to increased collaboration between on site businesses and external agencies and the ability to share resources across projects.

However, if staff are relocated to Queenscliff, the cost of service delivery will increase in three measurable ways;

- direct costs,
- lost opportunity cost (i.e. extra duration of a task when you could be doing other work) and
- increased carbon emissions.

In addition there are intangible cost increases such as the increased OH&S risks associated with driving extra kilometres and driving more frequently through the two largest cities in Victoria to reach field sites in the north of the state. Table 1 shows realistic estimates of these measurable costs when a selection of freshwater research projects are run out of Queenscliff compared with Snobs Creek.

Carbon emissions estimates are based on direct emissions of the work-vehicles doing extra-kilometres associated with being based at Queenscliff. More rapid turnover of leased vehicles, and an increased OH&S risk to staff, would also be an inevitable consequence of this increase in field-work kilometres.

Table 1 Examples of relative costs of FW research business based at Queenscliff in comparison to based at Snobs Creek

Location	Task	Increased Direct Cost \$	Lost opportunity cost (person x days)	Extra Carbon Emissions (tonnes CO2)
Dartmouth Reservoir	Eight overnight netting sets	163%	8	0.76
Gunbower Creek	Eight days electrofishing & netting at sites near Cohuna	142%	16	0.97
Rubicon River	Quantitative electrofishing surveys of 2 sites	256%	4	0.43

A complete freshwater assessment project like the ones which these examples were drawn from could typically require these tasks each month. If so, over a year the costs detailed in Table 1 would amount to \$60,000 in lost opportunity costs and over 25 tonnes of carbon dioxide.

Recent investment in aquaculture research through the Future Farming Initiative (a \$ 4Million initiative + co-investment) will be compromised as the R&D can only be carried out using infrastructure built at Snobs Creek by the previous *Our Rural Landscapes* initiative (\$ 4.2 million over 5 years). This project has resulted in genetically distinct “family lines” that will be used to breed elite strains of Murray cod broodstock for the aquaculture industry. Another use for this technology is in restocking programs for the genetic integrity of some populations. The family lines must be held separately and this requires very specific infrastructure and recirculating aquaculture system (RAS) technology.

If the staff on this project are relocated to Queenscliff it is likely that 5 years of R&D will be wasted. To build an equivalent RAS system (30-50,000 Litre capacity) at Queenscliff would cost \$300-500K and require exchange capacity of 3.65 ML of water per year. Queenscliff does not have access to this volume of freshwater, and does not have a permit to discharge this volume of water into Swan Bay, a marine reserve.

Better use of infrastructure

Efficiency of operations at Snobs Creek could be dramatically improved by encouraging other Agencies to utilise existing facilities on site to undertake external research. There is un-tapped potential to develop the Snobs Creek site as a research park that provides infrastructure, security and controlled conditions for analytical research (e.g., ponds, streams, tanks raceways,

aquaria, laboratories, controlled-environment rooms). This would off-set the running costs of the site thereby improving efficiency.

Attraction and career development of staff

The strategic planning strategy outlined in this alternative proposal will result in career opportunities for staff through defining the role and purpose of FRB at Snobs Creek and providing a clear direction for future research. This will allow researchers to develop large-scale, strategic projects with extensive collaborative linkages to assist FV to sustainably manage and monitor Victorian fisheries.

Opportunities to recruit new staff and develop the careers of existing staff will flow from the re-invigoration of the science effort at the site.

The relocation proposal diminishes career opportunities for FRB Snobs Creek staff within DPI as some of the staff will be forced to look elsewhere for work.

SUMMARY AND CONCLUSIONS

This Alternative Proposal presented here addresses the better science outcomes, efficiency and career development criteria required by DPI. It presents a model that retains capability with a view to the future long-term requirements of the State Government's statutory obligations to manage the inland fisheries in Victoria.

Key conclusions from the critique of the rationale provided by DPI are as follows:

- FRB at Snobs Creek has demonstrated its ability to both attract funding and attract and retain staff from their present location and the move to Queenscliff will negatively impact on this.
- Co-ordination of R&D and communication activities can actually be enhanced by re-instating the leadership position at Snobs Creek to provide real freshwater program management, effectively lobby for the interests of inland researchers, and re-focus FRB management attention on the work done at Snobs Creek.
- State, national and international relationships are enhanced by FRB being located at the two existing locations specializing with clear and distinct fresh and saltwater focuses. Our current state and national relationships are not with or through Queenscliff but in locations outside of DPI's jurisdiction hence making redundant the theory that a single location is required for better collaborative relationships.
- There is currently no barrier to sharing information and ideas between scientists at Queenscliff and Snobs Creek working in similar areas and therefore this statement does not justify the relocation proposal.
- Multidisciplinary interactions to tackle complex problems will not be made any easier with relocating to Queenscliff.
- Relocating staff from Snobs Creek to Queenscliff will not improve the career opportunities for those staff. They will not be any better qualified, or experienced than they presently are and any improved prospects for 'mentor mediated training' could be adequately compensated for in other ways at their existing location. The relocation proposal diminishes career opportunities for FRB Snobs Creek staff within DPI as some of the staff will be forced to look elsewhere for work.
- It is by no means clear where the proposed infrastructure cost efficiencies can be made, or in fact what would be the scale of any efficiency savings, when weighed against the infrastructure re-structuring costs that will be required to relocate the FRB staff as proposed.

- One location decreases the appeal of FRB to universities as it limits the types of engagement especially research with a freshwater focus. The continuation of two sites increases the appeal by offering both fresh and saltwater based research opportunities. As a research location for students interested in freshwater research in SE Australia, Snobs Creek has no equal.

This alternative proposal requires the re-description of one-position and a change in business operations to facilitate strategic planning of R&D and ease of interactions with collaborators in other agencies. It is simpler, less disruptive, cost-effective and maintains fair and reasonable treatment of staff.

APPENDIX I: SNOBS CREEK RESEARCH STATION AND FISH HATCHERY

DPI Snobs Creek Centre is located 5km west of Eildon on the Goulburn Valley Highway in north-east Victoria. It was founded in 1946, by the Cain Labour Government for the purpose of producing both trout and native fish and researching production methods. Research and fish production have always been an integral part of the Snobs Creek facility and have historically worked very closely together to achieve beneficial outcomes for the aquaculture

industry and recreational fishers. Direct engagement with the Victorian public through extension, guided tours and the Discovery Centre has also been an important role of the site. Key stages in the development of the Snobs Creek facility are outlined in Box 1.

The Snobs Creek facility has performed a vital role in freshwater fisheries and aquaculture research for many years and has made significant contributions to current recreational fishing and aquaculture opportunities at state, national and more recently international levels. The ability to undertake research into captive breeding, production technologies, stocking strategies and wild-fisheries assessments for key recreational fishing and aquaculture species, has been a long term investment by the State Government that showed

remarkable foresight and has paid big dividends. Many people would not be aware of the important and valuable function the Snobs Creek facility has historically performed to the benefit of fisheries and aquaculture. To highlight some examples:

- The trout aquaculture industry in Victoria (which now accounts for 80 % of Australia’s freshwater salmonid production) developed with scientific, technical and practical assistance of staff at the Snobs Creek facility.
- Breeding, husbandry techniques and stocking strategies for Murray cod, trout cod and Chinook salmon were pioneered by research conducted at the Snobs Creek facility.

Development of Facilities at Snobs Creek	
1946:	First season of fish production at Snobs Creek Research Station and Fish Hatchery.
1960:	Official opening by Henry Bolte, Premier of Victoria.
1985:	Native fish hatchery and production ponds built. New laboratories built.
1985:	Freshwater Discovery Centre opened to capitalise on tourism opportunities.
2000:	New administrative buildings (\$ 3 million investment).
2003-4:	State-of-the-art recirculating aquaculture systems for Murray cod selective breeding program built (\$ 2 million investment).

- Restocking programs run by Snobs Creek staff have ensured that species such as the endangered trout cod would not now be at the stage where it is currently being stocked as a recreational species.
- Macquarie perch techniques, developed and refined at Snobs Creek produced fingerlings for stocking. Some of these fish are still present today in rivers and lakes and recent growing interest in developing recreational fisheries for this species is likely to be unachievable without the research facilities and infrastructure available at Snobs Creek.

More recently, researchers at Snobs Creek have undertaken more applied studies to respond to the various requirements of funding agencies. Some examples include:

- Integrated Agri-Aquaculture – which includes inland saline aquaculture, wastewater aquaculture and aquaculture in irrigation networks – has attracted significant funding in recent years from the agriculture sector (Ecologically Sustainable Agriculture Initiative, Our Water - Our Rural Landscapes Initiatives) as well as water authorities and regional development funds (e.g. RIRDC and DIIRD);
- Post bushfire assessment and monitoring for recreational stream fisheries in bushfire-affected areas, is based at Snobs Creek and has worked across the NE and SE of Victoria, to lead the way for fishery restoration after the fires.
- Carp studies–comprehensive description of the biology of carp in Victorian waterways, developed the only computer software in the world for the simulation of integrated pest management of invasive fish species and has provided valuable input into the development of national invasive fish research programs, through the CSIRO and the Invasive Animals CRC
- Murray cod sustainability studies – currently being finalized, this project is Nationally funded, has a multi-state (SE Australia) focus and studies the factors affecting the sustainability of southern Australia’s iconic Murray cod, one of the most popular targets or recreational fishing, and a listed threatened species.
- Genetic technologies – focused on Murray cod initially this program has developed the techniques and platform technologies for genetic selection in many aquaculture industries.

APPENDIX II: ORGANISATIONAL STRUCTURE

There are currently four business units on site at the Snobs Creek facility.

- Fisheries Research Branch – Freshwater Fisheries and Aquaculture Sections (11 DPI staff) who report to a Program Manager in FRB at Queenscliff.
- Inland Fisheries Management – Fish Production Unit (5 DPI staff and 3 casual staff). These staff report to the Manager of Inland Fisheries in Spring Street.
- Freshwater Discovery Centre (1 DPI staff and 2 casual staff). These staff report to a Program Manager in FRB at Queenscliff.
- Business Services and Facilities (2 DPI staff) – report to separate managers

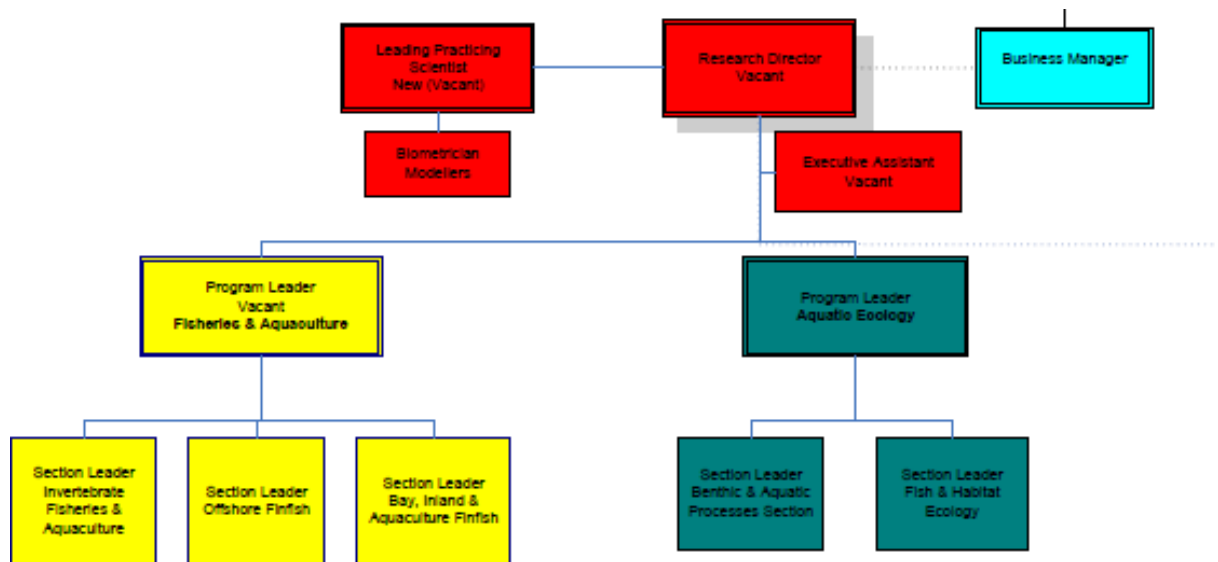
The proposed changes specifically relate to staff of the Fisheries Research Branch and Freshwater Discovery Centre and one Business Services Officer (who has already been redeployed). It is proposed that 11 full-time staff (ten ongoing and one fixed term) will be relocated to Queenscliff on the Bellarine Peninsula (Table 2).

Table 2 The eleven full time staff affected by Snobs Creek to Queenscliff relocation proposal

Position	Contract status	Years of R&D experience
Principal Scientist (Exec. Service)	Ongoing	38
Senior Scientist (Level C)	Ongoing	18
Senior Scientist (Level C)	Ongoing	25
Scientist (Level B)	Ongoing	20
Scientist (Level B)	Ongoing	30
Scientist (Level A)	Fixed term	2
Scientist (Level A)	Ongoing	10
Senior Technical Officer	Ongoing	3
Technical Officer	Ongoing	1
Technical Officer	Ongoing	3
Technical Officer	Ongoing	15

The FRB (Snobs Creek) in its current form came into being in 2007 after the group was integrated back into Fisheries Victoria. The group sits under the Program Leader for Fisheries and Aquaculture and the Section Leader for Bay Inland and Aquaculture finfish.

It should be noted that all of the senior management positions in the hierarchy of FRB Snobs Creek are currently based at Queenscliff and are vacant.



APPENDIX III: ANNOTATED R&D PORTFOLIO OF SNOBS CREEK BASED FRB STAFF

Program/ research area	Project Title	Funder
Aquaculture -		
IAAS	"Our Water"	Our Rural Landscapes initiative
	Aquaculture in saline groundwater	RIRDC
	Wastewater aquaculture – technical trials	Barwon Water & Peerless Aqua
	Wastewater aquaculture – supply chain & market assessment	Smartwater Fund, Barwon Water & Peerless Aqua
Genetics	"Future Aquaculture Science"	ORL, ORLe & Future Farming Statement
Fish production	Murray cod aquaculture project	FRDC
Environment	Goulburn River Study	Fisheries Victoria , GBCMA, EPA, Goulburn Murray Water, industry
Management	Translocation guidelines	Fisheries Victoria
	Biosecurity guidelines for abalone herpes-like virus	Fisheries Victoria, FRDC, Abalone aquaculture industry, Abalone Divers.
	Best Practice Environmental Management Guidelines for the Salmonid Aquaculture industry	Fisheries Victoria , GBCMA, EPA, Goulburn Murray Water, industry.
International	Culture based fisheries development in Laos	Ausaid, NACA.
Freshwater fisheries-		
Recreational Fisheries Assessment	Murray cod sustainability	FRDC
	Stock assessment program	Fisheries Victoria
	Bushfire Recovery	DIIRD
	Goulburn River trout studies	Fisheries Victoria
Habitat rehabilitation advocacy and assessment	CMA Fish habitat consultancies (Various)	NCCMA, NECMA, GBCMA, GHCMA, EGCMA
	Snowy River rehabilitation (bass project)	DSE
Invasive animals	Victorian carp biology project	Fisheries Victoria, Pest Animal CRC
	CRC management	Invasive Animals CRC
	Movement and migration of carp in the MDB	Fisheries Victoria, Invasive Animals CRC
	CarpSim software development	Fisheries Victoria, PAC CRC/IA CRC
	Misc. Consultancies	SKM, Earthtech, URS

APPENDIX IV: ANNOTATED LIST OF COLLABORATORS

Universities

- Florida, USA
- Stirling, UK
- Minnesota, US
- Imperial College, London, UK
- Monash
- Melbourne
- Charles Sturt
- Challenger TAFE
- Deakin
- La Trobe

International Organisations

- Network of Aquaculture Centres in Asia/Pacific

Australian Government Agencies

- CSIRO
- Queensland Dept Primary Industries and Fisheries
- New South Wales Dept Primary Industries
- SARDI
- Victorian Dept of Sustainability and Environment
- EPA

Water Authorities and CMAs

Barwon Water

Goulburn-Murray Water

Glenelg Hopkins Catchment Management Authority

Goulburn Broken Catchment Management Authority

North central Catchment Management Authority

Consultants

Sinclair Knight Mertz

Earth Tech

RMCG

Streamline

Street-Ryan

Other

VRFish

Council of Victorian Flyfishing Clubs

Native fish Australia

Victorian Trout Growers Association



