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Managing Water Shortages

John Janmaat

Regional Innovation Chair in Water
Resources and Ecosystem

Sustainability

UBC Okanagan



Abundant Water

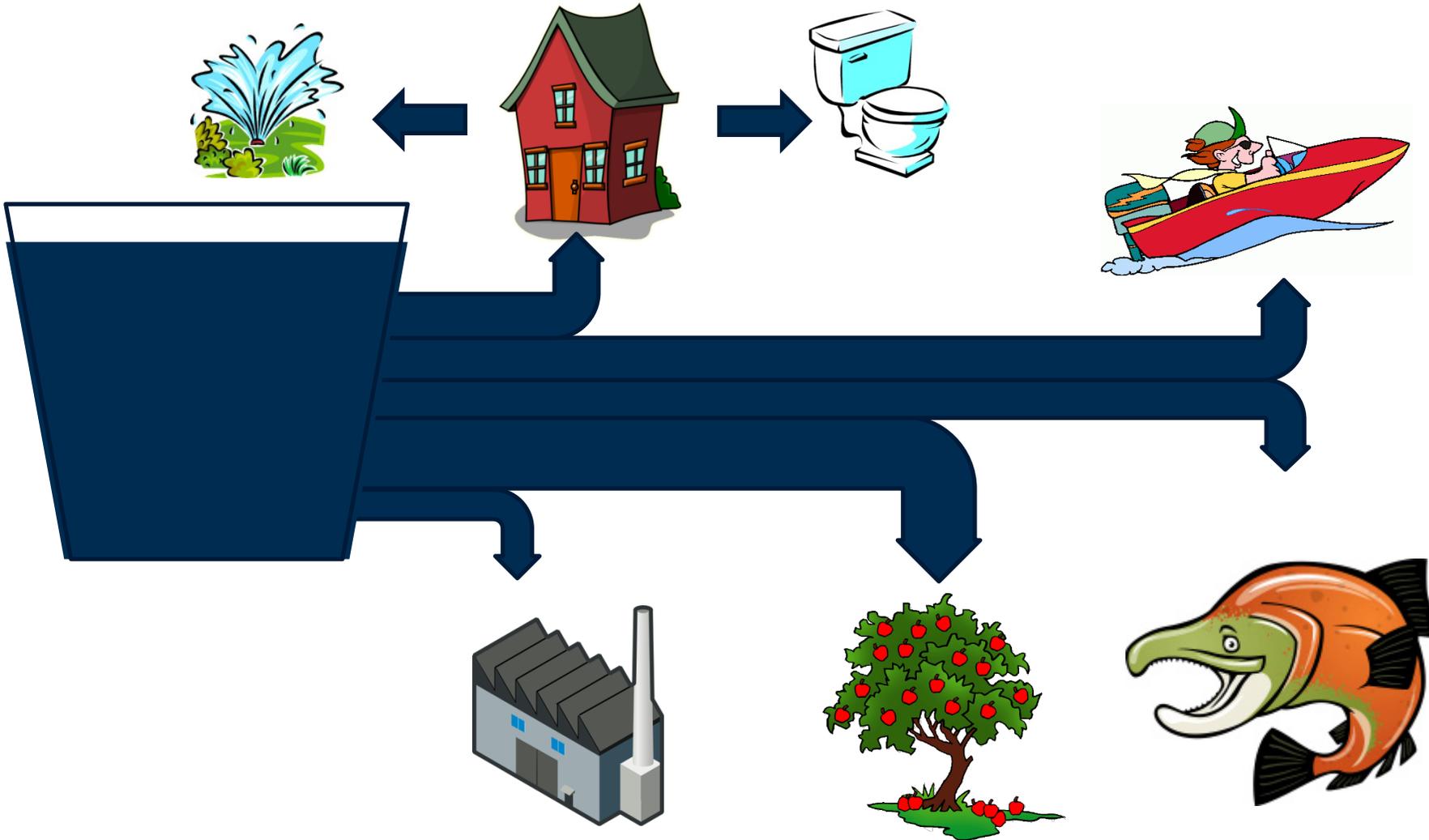
- In BC, water normally not 'scarce'.
 - Scarce: Not enough water for all 'recognized' users to have all the water they want.
- Environment and/or people concerned about environment may not be 'recognized' users.
 - Beyond some minimum flow, water left in nature not seen as producing value.
- With abundant water, some left for nature.



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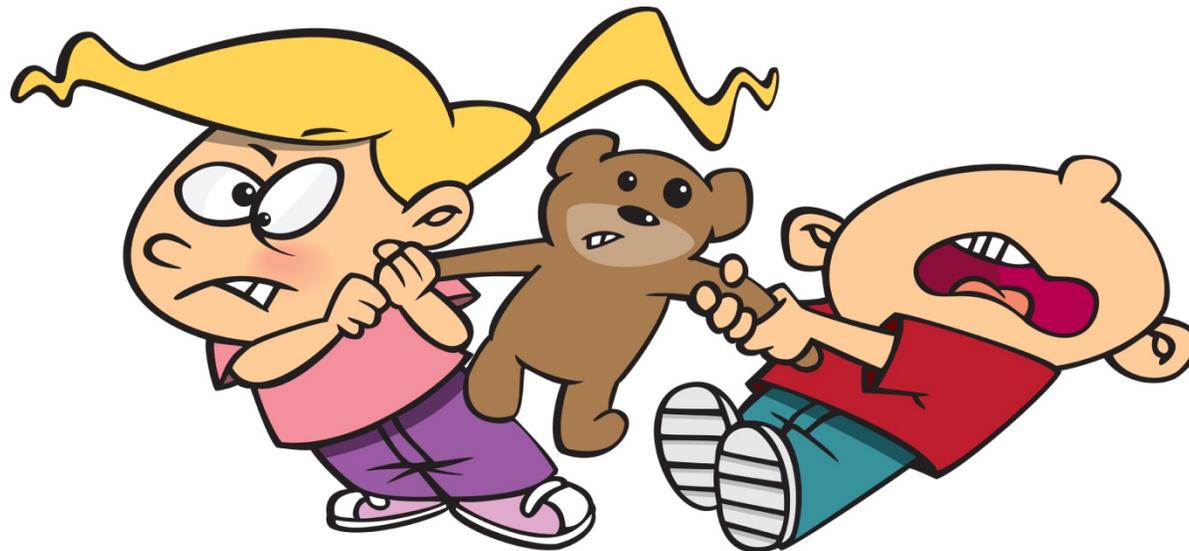
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Abundant Water



Scarce Water

- Not enough water to satisfy all users.
 - Drought.
 - Event (treatment failure, etc.)
- How do we share what we have?

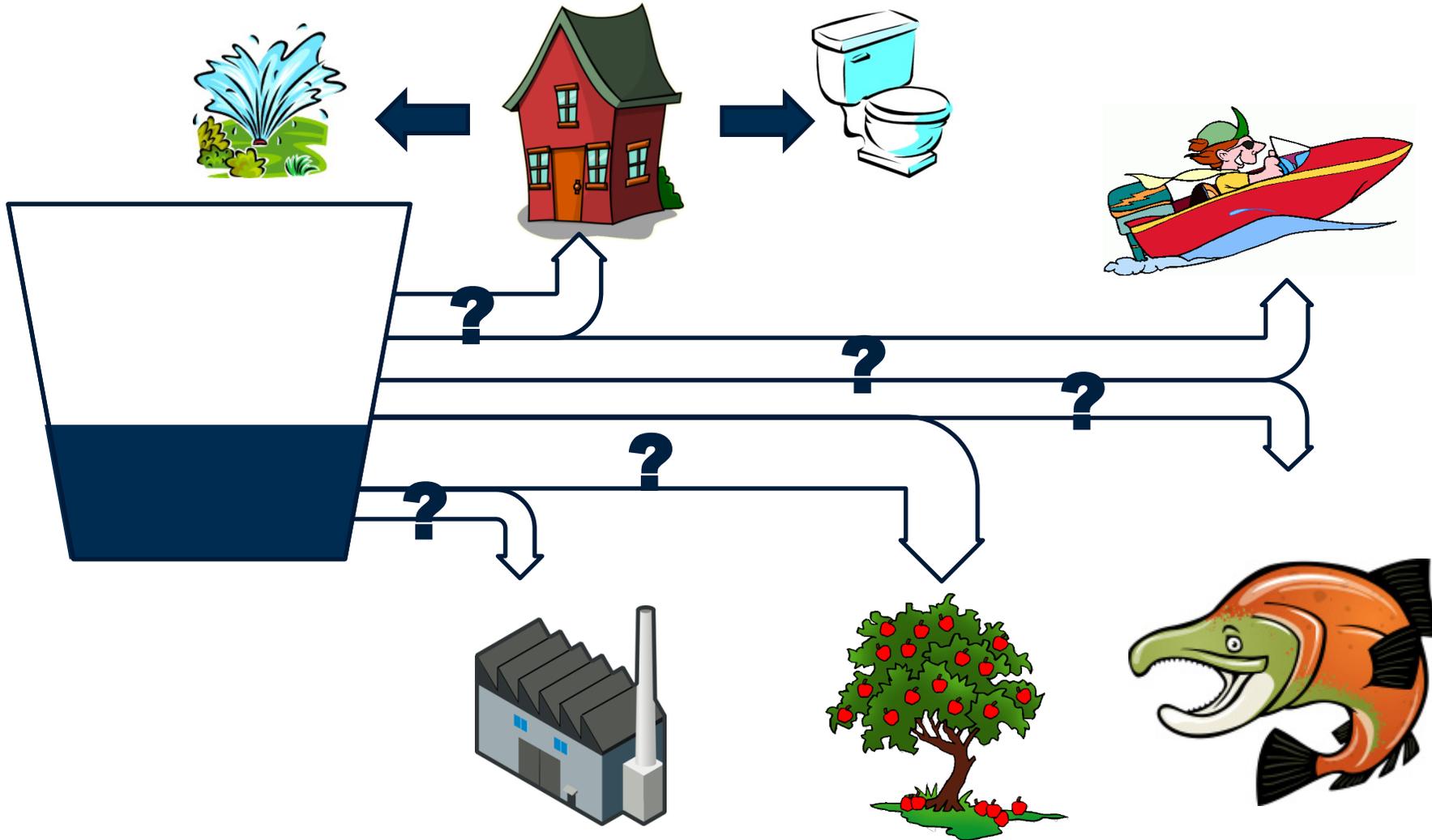




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Scarce Water





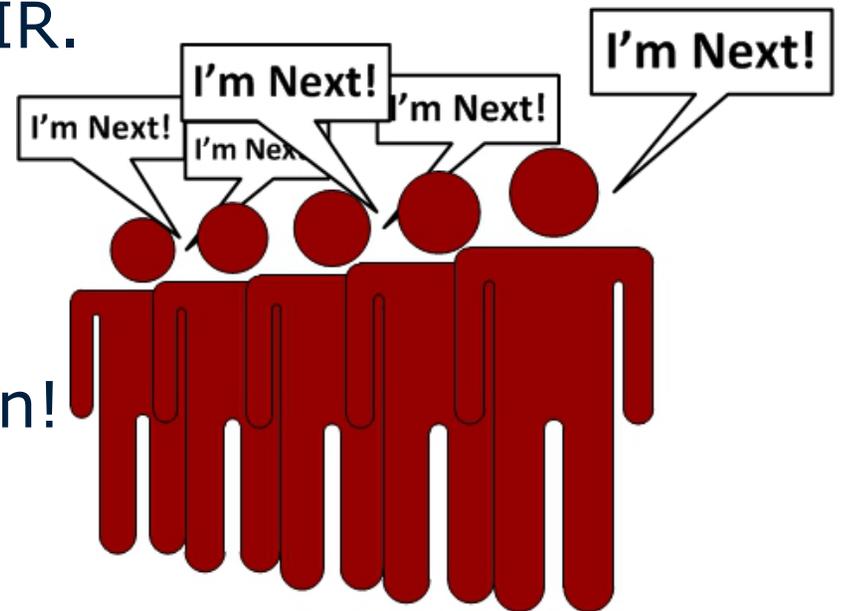
Water Sustainability Act

1. Licence Administration
 - Application, conditions, enforcement
2. Shortage Management
 - FITFIR, attenuated.
3. Alternative Shortage Management
 - Water Sustainability Plans.
- Water Shortages Act?
 - No need for act if no shortages!

FITFIR

- First In Time, First In Right.
 - Right based on date licence issued.
 - Lower priority, first cut off.
- FITFIR is a water shortage plan!
 - In WSA, attenuated FITFIR.
- Water Sustainability Plan

– Alternative, **IF** all buy in!





FITFIR

Vernon Water District

Purpose	Total Volume (MI)	Weighted Priority Date
Agriculture	276,207	1924
Residential	196,492	1963
Industrial	26,524	1969
Environment	79,165	1972
First Nations	5,918	1951

- Power Generation and Land Improvement not included.

Attenuated FITFIR

- Minimum Stream Flow requirements
 - Basic environmental needs have highest priority.
 - Arguing about what they are!
- Essential Household Needs
 - Household needs and animals for household use.
- Otherwise, FITFIR



Water Sustainability Plans

- Scope to do things differently.
- Must be 'better' than WSA.
 - Reduce conflict and/or better for environment.
- Key elements
 - All rights holders involved, compensation for those affected.
 - Maybe new regulations for plan area.
 - May reserve water for agriculture.





Water Sustainability Plans

- 74 (2) If a proposed plan ... recommends a significant change in respect of a licence ... and the holder ... **has consented to the change**, the proposed plan must be accompanied by
- (a) a copy of the written consent of the holder of the licence ..., and
 - (b) a detailed proposal assigning to each person or other entity who would benefit ... **some or all of the responsibility for compensating the licensee** ..., consented to in writing by each such person.



Water Sustainability Plans

74 (3) If a proposed plan ... recommends a significant change in respect of a licence ... and the holder ... **has not consented to the change**, the proposed plan must be accompanied by

- (a) a list of the affected licences ... ,
- (b) a statement of the public benefit ...
- (c) **a statement of any available source of funding to pay compensation or for compensatory measures for the involuntary significant changes**

Dealing with Shortages

- In WSPs, can't force licence holders to change actions without compensation plan acceptable to minister.
 - Not a way to force water users to change behavior.
- If want something other than WSA default, need everyone on board.





Compensation

- Everyone affected by WSP must see themselves as better off than without WSP.
 - Abundant water, no problem, nobody affected.
 - Water shortage, plan in WSP must be better for everyone than attenuated FITFIR of WSA.
- Compensation plan critical for users who take hit during shortage.

Mechanisms

- Buy out rights.
 - Develop drought plan.
 - Pay those affected enough to participate.
 - Holdouts, 'expropriate'.
 - Determine expected loss.
 - Propose better than fair payment in plan.
- High cost up front!



Mechanisms

- Water market.
 - Pay users to give up use of water during shortage.
- Need source of money during shortage.
- Demanded payment may be large.
- No up front cost.
- Cost during shortage unknown.



Mechanisms

- Dry year contracts
 - Seller agrees to forego water use in dry year.
 - Buyer pays if dry year occurs.
- Low up front cost.
- Not dealing in shortage.
- Know costs for water.
- Seller knows payment and conditions.





Mechanisms

- Payments for Ecosystem Services
 - Pay landowners to not use/protect natural areas.
- Not shortage plan.
- Protect wetlands, etc.
- Pay owner enough that benefit of use less than benefit from no use.





Conclusion

- Have WSA because of water shortages.
- WSA is plan for managing shortages.
- WSPs enable locally 'better' plans to manage shortages.
- WSPs need everyone on board.
- Compensation plans must be worked out up front.