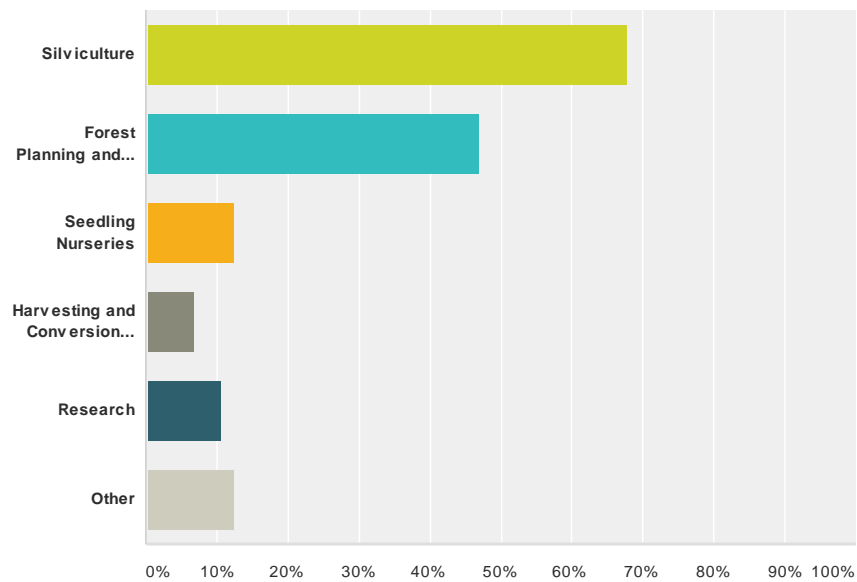


Forest Genetics Council (FGC) Survey 2014

Q1 Please identify your area of practice (select all that apply):

Answered: 105 Skipped: 0



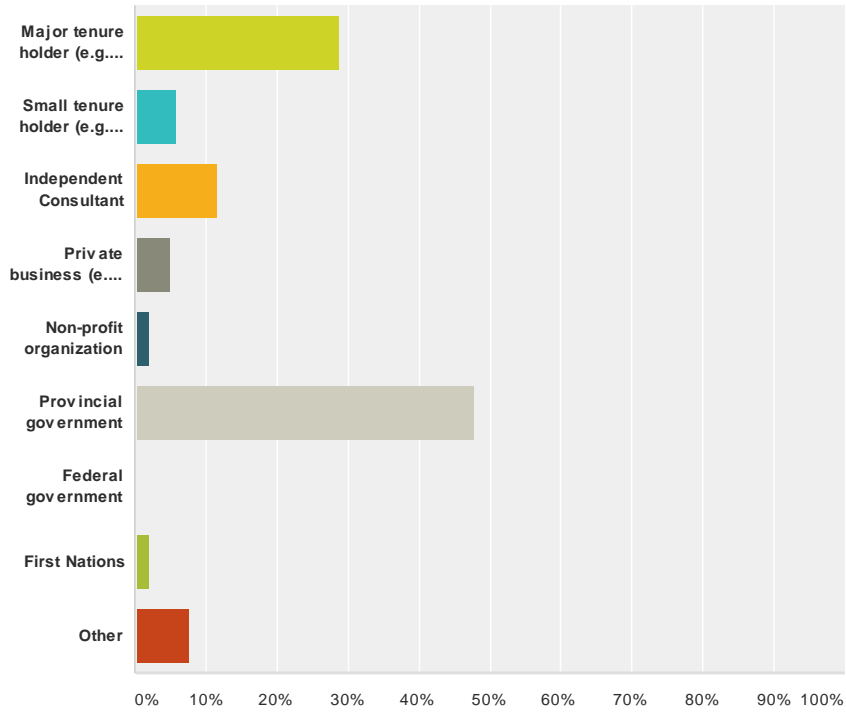
Answer Choices	Responses
Silviculture	67.62% 71
Forest Planning and Management	46.67% 49
Seedling Nurseries	12.38% 13
Harvesting and Conversion (milling, pulp and paper, etc.)	6.67% 7
Research	10.48% 11
Other	12.38% 13
Total Respondents: 105	

#	Other (please specify)	Date
1	Company that produces forest health products.	8/15/2014 9:19 AM
2	seed extractory	8/14/2014 3:02 PM
3	Administration	8/6/2014 8:25 AM
4	timber supply forecasting	8/4/2014 2:39 PM
5	teaching	8/2/2014 10:06 AM
6	Timber Evaluation	7/31/2014 11:13 AM
7	GIS	7/31/2014 10:30 AM
8	stewardship	7/24/2014 8:24 AM
9	Forest Health	7/23/2014 11:07 AM
10	Biometrics / Growth Modelling	7/22/2014 9:18 AM
11	Forestry manager and licence holder	7/21/2014 4:05 PM
12	Growth and yield / carbon modelling	7/21/2014 2:47 PM
13	Watershed Management	7/21/2014 2:15 PM
14	test by Jack - ignore	7/3/2014 10:30 AM

Forest Genetics Council (FGC) Survey 2014

Q2 Please identify your employer:

Answered: 105 Skipped: 0



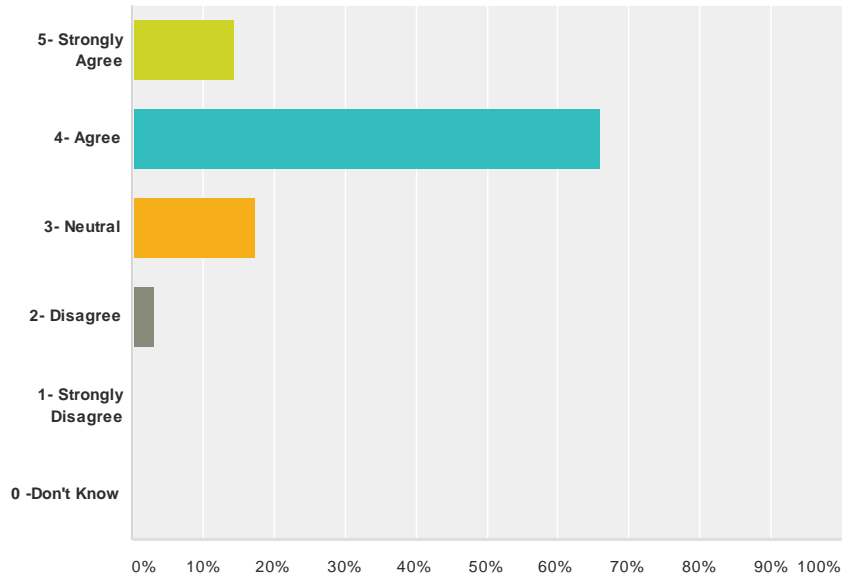
Answer Choices	Responses
Major tenure holder (e.g. TFL, Forest Licence)	28.57% 30
Small tenure holder (e.g. Woodlot, Community Forest Agreement)	5.71% 6
Independent Consultant	11.43% 12
Private business (e.g. seedling nursery, silviculture contractor)	4.76% 5
Non-profit organization	1.90% 2
Provincial government	47.62% 50
Federal government	0.00% 0
First Nations	1.90% 2
Other	7.62% 8
Total Respondents: 105	

#	Other (please specify)	Date
1	Private Forest tenure holder	8/15/2014 6:51 AM
2	university	8/2/2014 10:06 AM
3	Powerline construction	8/1/2014 7:45 AM
4	Retired	7/31/2014 10:04 PM
5	Retired	7/31/2014 7:19 PM
6	Research Forest	7/22/2014 9:18 AM
7	Regional Government	7/21/2014 2:15 PM
8	BCTS	7/21/2014 2:09 PM
9	test survey - ignore	7/3/2014 10:30 AM

Forest Genetics Council (FGC) Survey 2014

Q3 I am familiar with FGC and the provincial forest genetics and tree improvement program.

Answered: 105 Skipped: 0



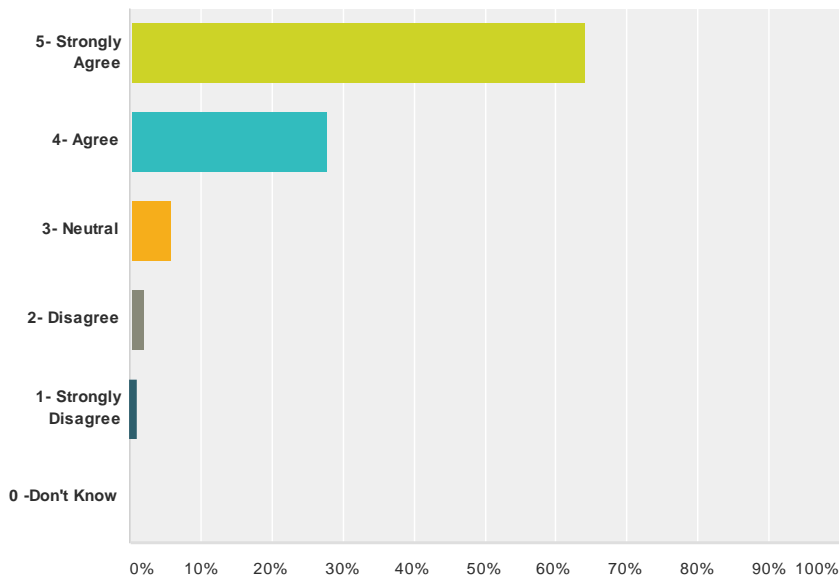
Answer Choices	Responses
5- Strongly Agree	14.29% 15
4- Agree	65.71% 69
3- Neutral	17.14% 18
2- Disagree	2.86% 3
1- Strongly Disagree	0.00% 0
0 -Don't Know	0.00% 0
Total	105

#	Comments	Date
1	Though retired I have a long history in TI from the beginning	7/31/2014 7:20 PM
2	I am new to this job. I am familiar with the forest genetics and tree improvement program, not with the Forest Genetics Council.	7/21/2014 4:40 PM

Forest Genetics Council (FGC) Survey 2014

Q4 The production and use of selected tree seed for improving forest health and productivity in BC is important.

Answered: 105 Skipped: 0



Answer Choices	Responses
5- Strongly Agree	63.81% 67
4- Agree	27.62% 29
3- Neutral	5.71% 6
2- Disagree	1.90% 2
1- Strongly Disagree	0.95% 1
0 -Don't Know	0.00% 0
Total	105

#	Comments	Date
1	There are sites where using increased GW seed; ie. producing a crop that grows too fast, is detrimental to wood quality and to crop resiliency to natural damaging agents. In addition, I believe that moving a higher GW seed to a poorer site far from its source does not necessarily produce a better growing crop than a nearby natural sourced seed could produce and certainly does not reach its advertised GW on site.	8/15/2014 6:10 PM
2	I would be much more comfortable with the decisions being made and activities being support by The Forest Genetics Council if it had one or more representatives from the environmental community. Government/Industry working groups will make decisions that are biased to the interests of industry at the expense of the public and the environment, unless the Government/Industry working groups are expanded to include environmental, social and aboriginal representation.	8/4/2014 2:43 PM
3	I agree and have done much upon which the current program is based and happy to see the work continue. But have a great concern that we may be putting all our DNA eggs in one basket. With climate change have we truly captured the best DNA for future forests?	7/31/2014 7:24 PM
4	It is important that forest health screening and selection be an important part of the tree improvement tree selection process	7/23/2014 11:09 AM
5	Certainly, select seed is valuable for improving productivity, however, is the "genetic diversity" present within a minimum of 10 trees high enough to improve forest health or resilience? Also, are there better investments, such as silvicultural treatments, that may provide the same productivity / forest health benefits?	7/22/2014 9:18 AM
6	Should consider program for collecting bush run seed for species or ranges of species without orchards or orchard plans. Expertise in cone collection is hard to find and not financially rewarding.	7/21/2014 4:11 PM
7	I strongly agree that it could be important, but the way it is currently conducted, I don't think it is being used nearly as effectively as it could be. Our tree improvement practices are based on an agricultural model where crop rotations are short and new cultivars can be produced every few years to stay ahead of diseases. Obviously forests don't work that way and for extensive forestry as it is practised in BC, it isn't feasible to invest a great deal into a few resistant strains, rather our efforts should be focussed on enhancing natural selection so that resistant genes are widespread in the population in wide range of genotypes.	7/21/2014 3:19 PM
8	I would add to forest health and productivity 'genetic diversity' - cross pollination of trees from different geographic areas can enhance genetic diversity if seed orchard and nursery management practices allow. Diversity is key!	7/21/2014 2:19 PM

Forest Genetics Council (FGC) Survey 2014

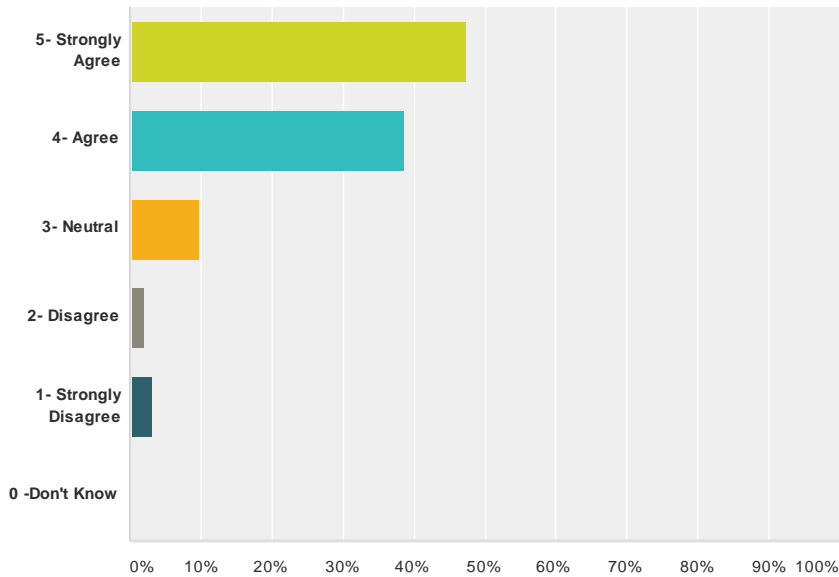
9

I think there is a growing trend of evidence to show that 'growth' is less important, and forest health/longevity is much more important. We are seeing significant trends in mortality/Fore& Health issues

7/21/2014 8:27 AM

Q5 The selection and use of tree seed (and seedlings) for reforesting harvested areas in BC should be influenced by science-based guidelines that account for future climate.

Answered: 104 Skipped: 1



Answer Choices	Responses	Count
5- Strongly Agree	47.12%	49
4- Agree	38.46%	40
3- Neutral	9.62%	10
2- Disagree	1.92%	2
1- Strongly Disagree	2.88%	3
0 -Don't Know	0.00%	0
Total		104

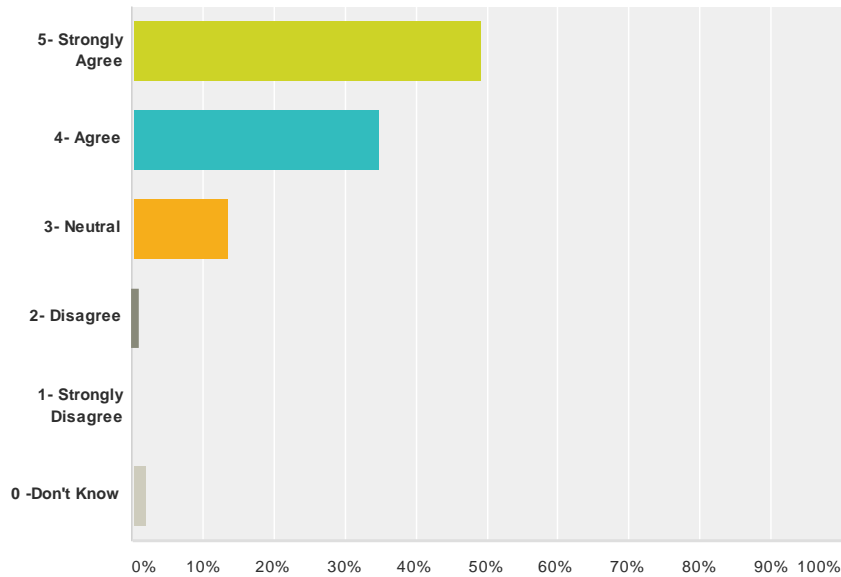
#	Comments	Date
1	1. It is premature to attempt to determine which seed source will perform better in 50-200 years and act on that assumption now. 2. It is illogical to plant a species that will not perform in current conditions because we think it will perform in 50+ or even 20 years (to quote "Trees are genetically adapted" and that gene base has been around and adapting for hundreds of years. We need to hold the course based on our tested and proven knowledge and to be patient. 3. It would be folly to limit the planting of pine because of its susceptibility to certain damaging agents, namely mountain pine beetle, when pine is the most resilient species in our province. We need to do a better job educating our public with the truth. 4. Where is our profession when we are restricted to comply with one hundreds of miles from the site, no knowledge of the site, and limited, or no, experience in growing a crop over a long term (this regarding FFT species selection policy).	8/15/2014 6:10 PM
2	Nature can adapt far more efficiently than government. Still, science-based guidelines should be used.	8/15/2014 10:28 AM
3	But, the rules development for such transfer standards and use standards need to have the involvement of a representative (or more) from an environmental organization.	8/4/2014 2:45 PM
4	future climate in general may be able to be forecasted, however variation based on local geography is tougher to forecast...	8/1/2014 2:40 PM
5	Biological diversity has always be important to account for climate changes cooling/warming, dryer/wetter, and associated pest/pathogen regime changes over long term (100-200+ yrs). I don't see this being a new importance.	8/1/2014 7:52 AM
6	See previous expressed concerns	7/31/2014 7:26 PM
7	It might be the 'accounting for future climate' that is the tricky part.	7/31/2014 2:58 PM
8	this is a dangerous game what happens if the model you base your decision on is wrong??	7/31/2014 11:15 AM
9	The current strategic plan appears to be limited in that use of non-indigenous seed is outside the scope of the plan. This should be reconsidered.	7/26/2014 7:06 PM

Forest Genetics Council (FGC) Survey 2014

10	Again, selecting seed, with limited genetic diversity relative to natural populations may reduce resilience given the uncertainty involved in predicting future forest climates and forest health concerns related to this change. The most critical point in tree survival is establishment, and while we need to plan to establish trees in the future, trees bred to reflect future conditions may not be the most appropriate for current establishment conditions. From my understanding, the most critical points for survival are the extremes experienced, not the overall average climatic conditions, so I believe establishing stands for resilience in general is again a better approach.	7/22/2014 9:18 AM
11	It is difficult to predict the future climate for trees that will live for the next 60-80 years. But we have to go with the best information we have..and take a few chances with some side bets on what we might see.	7/21/2014 3:45 PM
12	This is just silly. Every single one of the climate models that the IPCC uses has failed utterly at projecting climate. Given that the earth hasn't warmed for about 17 years and by the satellite record, has actually cooled a small amount, just how is anybody going to take climate into account. About three papers have been published (in good journals) in the last year, which project a multidecadal cooling due to low sun activity. So just which imagined scenario of future climate should we base our selection on? Because forests are long lived, rotation lengths in Canada are long and climate cannot yet be predicted, forests must be managed so that they have maximum resilience. At a genetic level this means maintaining well stocked stands with good genetic variability so that the cream can rise to the top. Resilience also means maintaining the diversity of organisms in a forest, including mycorrhizal fungi, which play such a major role in adaptation to climate variation. Our strategies for maintaining mycorrhizal diversity are non-existent.	7/21/2014 3:25 PM
13	But remember, "Future climate" is a prediction (not known) unless you have a crystal ball.	7/21/2014 2:58 PM
14	Policies/procedures cannot remain stagnant - research must be extensive and adaptive to provide information to help forest managers adapt to expected rapidly-changing climatic conditions.	7/21/2014 2:21 PM
15	climate change ... in what way specifically? increased forest health issues? increased drought ? I think the program needs to assess these traits (survival of trees) compared to increased productivity. The two might be mutually exclusive goals.	7/21/2014 8:30 AM
16	But, there needs to be more two-way discussion with the forest practitioners. Current seed transfer rules, guidelines are sometimes questionable, rigid, and not field-science based.	7/19/2014 11:45 AM

Q6 FGC should support genetic conservation activities for BC's tree species where it is feasible to do so.

Answered: 104 Skipped: 1



Answer Choices	Responses	
5- Strongly Agree	49.04%	51
4- Agree	34.62%	36
3- Neutral	13.46%	14
2- Disagree	0.96%	1
1- Strongly Disagree	0.00%	0
0 -Don't Know	1.92%	2
Total		104

#	Comments	Date
1	The province should expend energy collecting and reserving seed for those species and zones with limited sources. Beyond that, conserving sites and species is expected by the public under the mandate of national and provincial parks, is it not? This is the objective for parks and reserves. Although I believe parks misses it when they "preserve the current state" and don't conserve the site and the government misses it on mountain pine beetle killed sites, for example. I see many burned or killed areas on crown land and parks that not regenerated immediately, or at all, that are now losing their soil and productivity --they are allowing deforestation in a province that boasts of its ability to grow forests. It is embarrassing.	8/15/2014 6:10 PM
2	If the Parks and reserves have it covered, then work should be supplementary to that.	8/14/2014 12:37 PM
3	The genetic conservation strategies must be developed with a representative of an environmental organization.	8/4/2014 2:47 PM
4	genetic diversity will be conserved with all the protected areas out there.	8/1/2014 2:44 PM
5	a lower priority nice but not crucial	7/31/2014 11:15 AM
6	Should only be concerned with unique or threatened populations	7/23/2014 1:15 PM
7	As well as developing new strategies..to fit changes from historic environments	7/21/2014 3:46 PM
8	I am not sure what this means. I know the tree orchards are very proud to say they have a complete representation of all the genes of various provenances, but this is meaningless unless the genes are allowed to recombine in myriad ways and then undergo selection for the phenotypes which are adapted to a particular site. Genetic conservation should be practised in BC at a field level as a part of normally forestry practise and the FGC could help with that but I am not sure what role seed orchards could play in that process.	7/21/2014 3:45 PM
9	What unknown challenges may we face?? With the amount of Crown land in BC being used for timber production, we cannot afford to breed for productivity 'winners' without keeping some of the productivity 'dogs' in the mix for diversity, especially those that may have different responses to growth initiation and shut-down (e.g., flush and shut down earlier or later in the season than their cohorts).	7/21/2014 2:28 PM
10	This is not a very insightful question. What is feasible? With climate change upon us, I do not think that a static conservation effort, such as a seed bank, is serving us very well. Populations evolve in nature, they don't in seed banks.	7/21/2014 1:48 PM
11	I believe that we actually need to step up the genetic conservation part of the program.	7/21/2014 8:30 AM

Forest Genetics Council (FGC) Survey 2014

12

FGC should consider supporting request for amending GAR (resource features) to include genetic resources, to provide strong tool for conservation/protection, where required

7/17/2014 1:16 PM

Forest Genetics Council (FGC) Survey 2014

Q7 What other considerations should the FGC take into account when developing its next 5-year strategic plan?

Answered: 99 Skipped: 6

#	Responses	Date
1	- Consider science-based studies on the impacts rusts have on artificially reforested stands.	8/21/2014 5:26 PM
2	Forest Health biotic agent resistance.	8/20/2014 3:25 PM
3	BC does not have clear objectives for the timber resource. This has led to silviculture practices that may not result in future forests that meet future needs. This should be taken into account.	8/20/2014 10:08 AM
4	1. Reintroduce the need for licence holders to maintain an adequate seed supply in the event of a temporary set back in any orchard. I believe we are too reliant on our orchards for long term supply. 2. Channel seedlings into the reestablishment of damaged areas on crown land and in parks in an effort to conserve soil and productive forest land and, in so doing, conserve seed and its sources. Additionally this will help to reduce greenhouse gas emissions and increase the carbon sink for the province. 3. Continue to develop pine orchards with rust resistant attributes for rusts that cause mortality and those that severely reduce log volume and quality. Look into other diseases, perhaps elythroderma, where an orchard with its resistance would be beneficial. 4. Allow in SPAR for the forester to select a natural source seedlot for a site that he/she believes will be as or more productive and/or resilient than an orchard seedlot. There is a 5% tolerance which allows for minor elevation/zone overlaps, technical error, planter noncompliance. SPAR could be adjusted to permit some allowance for decisions that are intended to produce potentially positive outcomes, and yet remain within the Chief Foresters 5% tolerance. It could be the last request made for a given sow year by an agency to show that the tolerance is not being abused and the standards are being complied with. For example, a natural source commandra resistant seedlot is preferable in some sites to an orchard seedlot; and a natural source seedlot from close proximity transferred in a positive way (upward, westward, and northward within compliance) can grow as well or better than an orchard seedlot on a poor and distant site.	8/15/2014 6:38 PM
5	Is the FGC really the priority at this stage of the harvest response to MPB?	8/15/2014 10:30 AM
6	Don't forget to focus some effort on genetics of fast-growing plantation trees grown for the production of biomass. This will be a vital resource in a future carbon-neutral world.	8/15/2014 9:22 AM
7	Increased genetic gain for high elevation species and the introduction species that maybe more resilient to climate change. E.g. Interior pines (ponderosa) being introduced to the CDF zone or at least introducing trials.	8/15/2014 6:58 AM
8	Appropriate trials/research to support the gains expected from select seed	8/14/2014 3:39 PM
9	opportunities for non-indigenous species and research into their suitability in field trials	8/14/2014 3:04 PM
10	areas that are relatively free of large disturbances should not be short changed. In fact there may be an argument for disproportionately ensuring genetic resources are fully managed where such risks are less	8/14/2014 12:40 PM
11	Mid-term timber supply	8/12/2014 7:22 PM
12	Continued focus on ensuring that Tree Improvement seed production is available to and meets the needs of all users. Although resource pressures may push production needs down, there is nothing wrong with building inventories in many zones. We have never had the opportunity to do this in TI and while the current orchards are in place and producing we should try to build up our seed banks. This is not a business comment but a resource management comment.	8/12/2014 8:14 AM
13	seed supply and demand	8/6/2014 2:51 PM
14	Landscape level silviculture planning.	8/6/2014 8:28 AM
15	The FGC needs to ensure it maintains its social licence to guide the work it does. In hind sight, when looking back at problems that have developed because of decisions apparently made by the FBC, people will criticize the FBC as being an industry lackey - unless it begins including representatives from other relevant stakeholder groups including representatives from environmental organizations.	8/4/2014 2:51 PM
16	wood quality tree form growth rates	8/2/2014 10:14 AM
17	seedling mortality from root rots from the nurseries. Root rot resistance.	8/1/2014 2:48 PM
18	increase orchards for species with future increased importance i.e FDI in northern zones and downsize orchards for species with less importance i.e. HW	8/1/2014 9:00 AM
19	To me, most climate change is the new catch phrase for 'biodiversity' and we've been implementing similar biological best practices for 10-20 years (ie: convincing dummies that monocultures are dumb; those that insist on these practices eventually receive a lesson via ecological correction). Mtn pine beetle issue is >10yrs old, those that didn't prepare then are doomed now. Good to keep FGC in the news though and I believe great work has been done.	8/1/2014 8:19 AM
20	Lodgepole pine being planted in areas marginally suitable to the species	7/31/2014 10:07 PM
21	I am not sure if genetic conservation includes maintaining a seed bank, if not, I believe that having a seed bank of several natural stands/species across seed zones will be important in the future.	7/31/2014 9:13 PM
22	The pine beetle episode could have been less of a problem if people had listened to those who knew best. I have a big concern about the maintenance of genetic diversity - corn breeders, wheat breeders and others have had past problems. Change must be appreciated as inevitable we must be prepared in spite of improved technology plan it is important to anticipate problems and be prepared	7/31/2014 7:31 PM

Forest Genetics Council (FGC) Survey 2014

23	Lack of professional commitment. Legislative roadblocks. Risk adverse licensees. No support for research. Aging workforce who dislike change. Indecisive managers and government officials who lack training and expertise but have been 'thrown' into positions to cover off retired or vacant staff. Silviculture is a liability licensees would rather avoid. Reduced rotations might be a better approach to climate change. Stocking standards, RESULTS and FSP's are quite strict, not really providing latitude for experimentation, licensees wait until all the dust has cleared and provenance trials show clear results before implementing large scale adjustments to their planting programs. Need to provide either flexibility or higher allowance for good ideas that may not be mainstream yet, instead of waiting for years to go by...Forest Health for some of what was minor before is becoming serious, need to include consideration of broader resistance to classes of biotic agents, eg. defoliators, rusts, doth, root rots, etc. Might need to mix bag species with superior resistance, so 1 is rust, the other root rot, and both are planted in the same site .. eg diversity tree species and genetics on the same site.	7/31/2014 3:09 PM
24	unknown	7/31/2014 11:16 AM
25	Stocking standards and policy relating to free growing stands must also be adaptable to support a desired future forest condition that supports improved forest genetics, species diversity, forest health, and disease/pest resistance. Facilitated migration and improved seed should be used in conjunction with species and stock choices that consider forest health factors and foster ecosystem resilience. Structured monitoring and adaptive management that is linked directly with the desired future forest condition will also help to achieve desired future stand conditions.	7/31/2014 10:57 AM
26	none	7/31/2014 10:44 AM
27	conservation of threatened spp. ie whitebark pine - seed storage, reintroduction	7/31/2014 10:42 AM
28	Note increased harvesting focus now in the IDF in the Southern Interior as the beetle affected Pli stands have largely been addressed, or have decreased opportunity to harvest for various reasons.	7/31/2014 10:35 AM
29	N/A	7/31/2014 10:31 AM
30	Genomic information	7/31/2014 8:03 AM
31	Potential for short rotation intensive forestry using emblings, somatic embryos and artificial seeds etc to prepare for a potentially shrinking landbase given recent court decisions.	7/30/2014 10:32 AM
32	Should the Chilcotin be faced with another big fire year, is there enough seed in the system to reforest the area and still meet normal harvest area demands. If there isn't sufficient seed, where could be get the seed. Will Climate Based Seed Transfer guidelines account for this?	7/28/2014 2:46 PM
33	The use of B-class seed presently in inventory together with A-class as a hedge against unforeseen climate changes	7/28/2014 12:49 PM
34	provide input to the Chief Forester's Standards for Seed Use to allow for the deployment of more "exotic" species from locations outside of the province.	7/28/2014 9:37 AM
35	Pests of young stands	7/28/2014 9:03 AM
36	Climate change and ensuring sufficient supply of select seed are the two major considerations that come to mind.	7/26/2014 7:08 PM
37	promote natural regeneration and utilization of advance regen in increasing species diversity- assessment and documentation of natural seed source survivability in wake of climatic change examination of plantations with high genetic worth, to see how they are responding ? Are they meeting our expectations ? Push for accounting for genetic gains in Timber Supply Analysis	7/25/2014 11:01 AM
38	Better seedlings for frost and pest damage, namely, voles.	7/24/2014 8:32 AM
39	health of the trees such as the increase in rusts, dothistroma, spruce and fir beetle	7/24/2014 8:27 AM
40	Should consider natural resistance to forest pest and diseases such as gall rust	7/23/2014 1:16 PM
41	Disease - esp Western Gall Rust. Focus has been on increased volume, more focus on health is needed for A class seed.	7/23/2014 1:11 PM
42	Resistance and tolerance of improved seed to insects and disease. We want to be 100% certain that improved seed is not more susceptible to insects or disease. Forest health assessments should be undertaken when assessing the growth performance of different seed sources in progeny trials.	7/23/2014 11:15 AM
43	Can't think of anything else right now.	7/22/2014 4:12 PM
44	Changing markets and seed requirements, bioenergy, species diversification, latitudinal changes as well as elevation,	7/22/2014 3:50 PM
45	Changing trends in species availability and species selection. Outreach and extension with practitioners. Many changes, both regulatory and environmental, are providing a lot of uncertainty. Professional reliance is leaving a lot to the discretion of the practitioner, and bases practice on best available and latest and greatest information. Many practitioners are struggling to keep up to date, and there is always the need for learning.	7/22/2014 10:49 AM
46	Despite climate change, large disturbances such as the mountain pine beetle epidemic and fires, and increasing resource pressures, reforestation activities remain largely the same.	7/22/2014 9:30 AM
47	More long-term monitoring needs to be undertaken to validate the assumption that that select seed increases forest productivity and to quantify this amount. This should not be done independently, but in coordination with the FAIB, which already has methods developed for stand monitoring.	7/22/2014 9:19 AM
48	the cost	7/22/2014 9:09 AM
49	Density and ingress of naturals depending on Biogeoclimatic classification.	7/22/2014 7:40 AM
50	*	7/22/2014 7:09 AM
51	These are appropriate strategies.	7/21/2014 4:45 PM
52	Consider genetic improvement for species such as Ba as it becomes an important species on rich valley bottom ecosystems.	7/21/2014 4:38 PM
53	Re-assess priority of desirable traits in light of changing climate and market demand.	7/21/2014 4:25 PM
54	Identifying gaps in class A availability (NE Pli High) and coordinating collection or redistribution of B class (NE Cw, Hw.etc.) Fair distribution of seed	7/21/2014 4:18 PM
55	Insect tolerance	7/21/2014 4:10 PM
56	1	7/21/2014 4:06 PM

Forest Genetics Council (FGC) Survey 2014

57	FGC needs to make a decision about what it can do that is actually useful for the type of forest management practised in BC. It is not realistic to think that the FGC is going to develop a MPB resistant strain or strains that are better adapted to whatever the climate may be in 50 years. What we may be able to do with the extensive forestry that we practise in BC is to develop enhanced natural selection where a wide diversity of genetic material is maintained across the landscape at stocking levels which allow for natural selection to take place. Genetic improvement can only be practised on intensively managed areas and BC should consider developing that type of forestry on limited areas within the province. FGC could provide material for those types of environments.	7/21/2014 3:50 PM
58	We cannot be too conservative. One of The reasons we have massive beetle and fire events is that we have timber that is too old and should have been harvested earlier.	7/21/2014 3:48 PM
59	No other suggestions	7/21/2014 3:47 PM
60	First Nations title rulings have the potential to change forest management and reforestation activities in BC also.	7/21/2014 3:03 PM
61	The effect of natural disturbances of the ecosystem, that are critical to overall forest health.	7/21/2014 2:50 PM
62	The list above covers everything	7/21/2014 2:50 PM
63	Shortage of staff and funding.	7/21/2014 2:45 PM
64	Letroderma - impacts to pine in the IDF	7/21/2014 2:41 PM
65	Loss of industry long-term financial commitment Loss of knowledge base through attrition and lack of provincial funding to support successional planning in research (notably genetics). May also be an issue with private companies. Relationship between forest ecosystems and species/families (e.g., ability of families to adapt to varying climate-based stresses like heat and drought, adaptation of families to different ectomycorrhizal communities). Funding for delivery of forest genetics research to forest managers. Consistency of funding from year-to-year.	7/21/2014 2:34 PM
66	Expanding tree improvement programs to areas of BC which don't currently have reliable access to enhanced seed (e.g. BC Peace pine class A)	7/21/2014 2:23 PM
67	??	7/21/2014 2:22 PM
68	present genetic variations. Keeping a bank of B class seed.	7/21/2014 2:18 PM
69	Tracking the performance of natural regeneration versus planted, select stock to assess the economic utility of the breeding program and planting activities.	7/21/2014 2:17 PM
70	Non-timber objectives	7/21/2014 2:11 PM
71	Mixed species plantation including management of deciduous species should be a focus.	7/21/2014 2:06 PM
72	Level of investment in provincial seed orchards should match projected demand for specific species.	7/21/2014 2:06 PM
73	With climate change, pests and diseases will become more significant as trees become increasingly stressed. Continue to select for pest resistance.	7/21/2014 1:52 PM
74	In a global competitive market, we cannot compete with countries like Chile, NZ, southern US when it comes to fibre production. We must increase the value of our product by growing wood with desirable wood traits. Volume increases is one thing, wood quality is another....	7/21/2014 1:51 PM
75	carbon trading -e.g. fgc works on pioneer species like aspen.	7/21/2014 1:50 PM
76	Secure and adequate seed supply for minor species even if that is left only to wild collection sources.	7/21/2014 12:28 PM
77	Consideration should be given to the management strategies on lands granted to First Nations such as the Tsilhqot'in Nation in the recent Williams Case decision of the Supreme Court of Canada as these lands may no longer be considered Crown Land. This case involves several hundred thousand hectares of land and this decision may be the tip of the iceberg.	7/21/2014 11:57 AM
78	Species unique to BC or for which we see as having a competitive advantage in the future product wise.	7/21/2014 9:39 AM
79	Fragmentation of the landscape leading to isolation of populations of species, eg. whitebark pine	7/21/2014 9:22 AM
80	technical capacity	7/21/2014 9:06 AM
81	forest health, forest health, forest health... eg. Gall rust resistance in Pli for the South (Eastern) Interior of BC., blight/needle cast resistance in Lw for the South Eastern Interior, Weevil resistance in Sx for the same area....	7/21/2014 8:32 AM
82	Currently there is too much emphasis placed on growth and form in the class A seedlots, and not enough emphasis on disease resistance and overall forest health and adaptability.	7/21/2014 8:21 AM
83	Changing management practices e.g., hardwood management, partial harvest	7/21/2014 8:21 AM
84	1. Increase tree breeder staff to levels prior to cut-backs and retirements. The government talks about succession planning, but we continue to see younger individuals going to other jurisdictions, despite obvious vacancies. I am not convinced changes to seed transfer rules are considering climate fluctuations as opposed to mean change.	7/19/2014 11:45 AM
85	Future reduction in cut: Overproduction and potential Inventory issues of Improved seed: Cost of production scales by species: Tree improvement sustainability	7/18/2014 2:03 PM
86	All of these large disturbances have happened outside of the heavily populated areas (Lower mainland and Vancouver Island). People need to be made aware and understand the importance of the FGC work and how it impacts them otherwise how do you make the best of the work FGC is accomplishing. Educate the masses that think the world ends at Hope.	7/18/2014 1:26 PM
87	continuing to look at rust resistance in Pli families	7/18/2014 1:07 PM
88	Whether the planted A seed is actually surviving in some cases, for example see Pli / Fdi planted in Some ICH dying out after FG and replaced by Cw/ Hw stands	7/18/2014 1:01 PM
89	Forest health	7/18/2014 12:37 PM
90	That seems to cover most of the considerations.	7/18/2014 11:47 AM
91	Forest Health factors	7/18/2014 11:33 AM
92	Stick with Climate Change, Forest Health and productivity improvements.	7/18/2014 11:30 AM

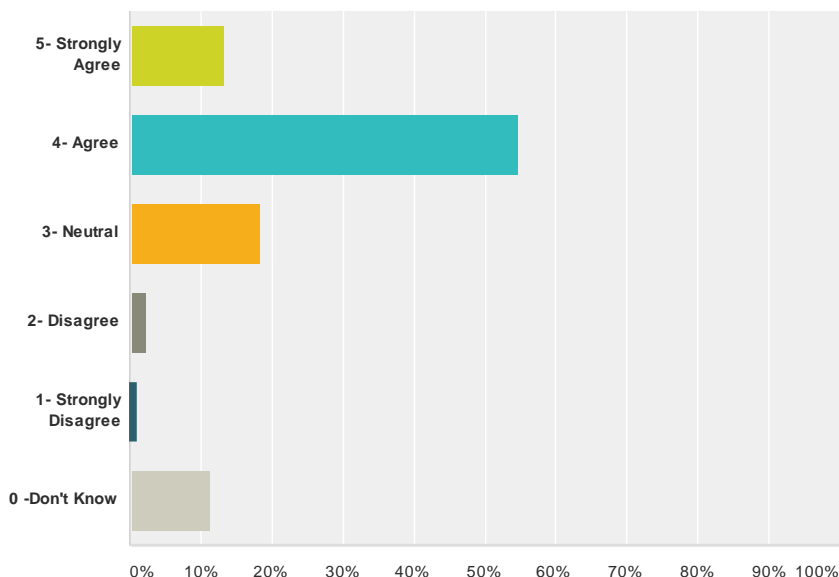
Forest Genetics Council (FGC) Survey 2014

93	Current Shortfalls in class A seed supply (ie Fdi)	7/18/2014 8:59 AM
94	First Nations title claims	7/17/2014 1:16 PM
95	forest health factors such as blister rust resistance	7/16/2014 1:16 PM
96	Ensure that a variety of tree species remain available and that tree improvement does not limit the choices available to forest managers	7/16/2014 11:25 AM
97	testing -a, b, c	7/7/2014 10:35 AM
98	budget	7/3/2014 10:52 AM
99	test	7/3/2014 10:43 AM

Forest Genetics Council (FGC) Survey 2014

Q8 FGC's current representation is appropriate to lead provincial forest genetics and tree improvement program in the interests of British Columbians.

Answered: 99 Skipped: 6



Answer Choices	Responses	
5- Strongly Agree	13.13%	13
4- Agree	54.55%	54
3- Neutral	18.18%	18
2- Disagree	2.02%	2
1- Strongly Disagree	1.01%	1
0 -Don't Know	11.11%	11
Total		99

#	Comments	Date
1	It does seem to be heavy to the ministry side...perhaps more balance with industry, research, and inventory interests.	8/15/2014 6:49 PM
2	I do not have confidence that CF appointments result in the best decisions being made.	8/15/2014 10:33 AM
3	Need to keep this as a limited group of upper-level decision makers.	8/12/2014 8:14 AM
4	The FGC needs to begin including representation from other relevant stakeholder groups, including representation from environmental organizations. The land base you are influencing belongs to the public, thus the management guidance must include more than government/industry representation. While I recognize and appreciate the FGC working group also includes academic representation - this is only slightly better than only being a government/industry working group. It is obvious from the guidance and rules established by the FGC that it is very narrowly biased to short-term economics and the agriculture of trees due to the value system, experience and blinders of the past and current representation. You might think the representation is broad - you need to prove it for me to have faith. One tends to believe what it is surrounded by, and if you exclude values and perspectives from your representation, you have failed to constructively evaluate the consequences and benefits.	8/4/2014 2:58 PM
5	Need to include one or more of major agric.seed companies, e.g. Cargill, Monsanto. They have much to offer in scientific and tech. expertise.	7/31/2014 10:09 PM
6	I am very pleased to see this longevity but we need a plan "B" in our tool bag to carry on the task for the next generation - are dedicated scientists on stream?, is the research upon which operations are based adequate?, is funding adequate? Are facilities adequate and management staff available? It does not take much to upset progress from generation to generation. Continuity must be a priority.	7/31/2014 7:37 PM
7	Not really sure about who is interpreting the "interests of BC's" I'm assuming by this you mean a productive stand of crop trees, but I'm not sure if this is what BC's are wanting to the exclusion of all else.	7/31/2014 3:11 PM
8	need higher profile and funding	7/31/2014 10:42 AM
9	Over representation of industry who are essentially ephemeral tenants, and no First Nations representation. Could the work of the FGC not be internalized into the day to day business of TIB as it appears all of the funding comes from MOFLNRO.	7/30/2014 10:59 AM
10	Need to make sure there is strong forest health representation.	7/23/2014 11:16 AM

Forest Genetics Council (FGC) Survey 2014

11	Then genetics program, as I already mentioned, is run by people working on an old agricultural model that doesn't work very well even for agriculture. They especially need people with an ecology background who can give some understanding of the role that genetics plays in more or less naturally function ecosystems as that is what our extensively managed forests are. Even though the FGC has made some small efforts at trying to understand the role that epigenetics might play in seed orchards, there attitude towards this rapidly growing area of study is hostile and backwards. Epigenetics could play a much bigger role in climate change adaptation than species transference or genetic improvement.	7/21/2014 3:58 PM
12	You have a good mix of professionals in the field.	7/21/2014 3:49 PM
13	Concerns that with genetics programs have been suffering from budget cuts, there has been lack of ability to have technicians and younger researchers working actively involved in programs - loss of knowledge base.	7/21/2014 2:36 PM
14	I would like to see more genetic expertise on the FGC. Often, limitations of what genetics can achieve or false promises and expectations are prevalent in non-experts. More than one or two members of the FGC should have graduate level genetics training.	7/21/2014 1:55 PM
15	likely need more Forest Health folks on the team. You should also have people on the board who are actually looking at the trees that are 15+ years old...eg. inventory / silviculturists/ field folks.	7/21/2014 8:34 AM
16	More representation or input from (on the ground) local practitioners should be considered.	7/21/2014 8:23 AM
17	I know it can be challenging... but First Nations?	7/19/2014 11:45 AM
18	test comment	7/3/2014 10:53 AM

Forest Genetics Council (FGC) Survey 2014

Q9 Comments and Suggestions (Optional)

Answered: 20 Skipped: 85

#	Responses	Date
1	As revenues from improved seed sales increase, try to hold a portion of sales in account to make up expected shortfalls in historic provincial budgets allocated to forest genetic conservation and tree improvement.	8/14/2014 3:06 PM
2	At least maintain or even expand the program. Need succession planning for key staff such as breeders. Need to ensure that expected improvements in volume, resistance, resilience are actually being realized and do more anticipatory breeding of traits for foreseeable problems/opportunities (e.g. drought/wind tolerance; new pests / longer growing seasons; milder winters)	8/14/2014 12:49 PM
3	The direction up to now has been good. Part of any 5 year plan needs to include a strong resource management perspective. With many in the industry focusing on business and market-based influences. Structures like the FGC (as a third party) are unique in being able to represent the "resource". They need to not only recognize this but include in in planning.	8/12/2014 8:19 AM
4	Thank you for giving this old guy a chance to provide some concerns be they real or imagined. At 81 years I realize how fragile valid programs can be so I wish you the best of luck and thank you for carrying the torch this far.	7/31/2014 7:39 PM
5	Research has become obscure and inaccessible, recommend establishing plots in areas where public can recognize trials or to become more active in having license integrate research and conduct and publish research to establish dialogue. Groups like the NSC are becoming less and less meaningful at a time when the opposity should be occurring.	7/31/2014 3:14 PM
6	get the govt to improve funding!	7/31/2014 10:43 AM
7	Internalize the work of the council and provide industry and others the opportunity to provide input but not be part of the decision making for a public landbase.	7/30/2014 11:00 AM
8	I think that we should look at the preservation of more trees for genetic reserve or gene pool. I think that we should look a better or more in depth look at themoving of tree species with respect to climate change. From a field perspective I have found a number of "drier or different" sites from the just after the last ice age. Some of this knowledge could be used to better predict where we should be planting different tree species.	7/24/2014 8:34 AM
9	As I mentioned in a previous comment, there should be more coordination and cooperation among different branches to minimize costs, and have the most appropriate professionals assigned to specific tasks. For example, working with the FAIB to monitor and quantify the forest productivity gains related to planting trees produced from select seed in an industrial application (as opposed to small scale research trials).	7/22/2014 9:28 AM
10	1	7/21/2014 4:06 PM
11	Several studies in the last few years have suggested that lodgepole pine plantations are suffering disease at rates above natural regeneration. An old axiom of crop improvement is that a plant only has so much energy and if that is concentrated into one attribute then other attributes suffer. Even though that is an old axiom, I don't think it is invalidated and I wonder if "A" seed is not more prone to disease. I would at least like to see some tracking of the performance of A seed for attributes other than growth. I think there is a huge potential for genetic improvement in BC but it should involve extensive practises like leaving plus trees as seed trees, collecting seed from plus trees during harvest for use back on those sites, provisions to allow for natural selection to take place, using trees that escape disease or pest as the seed source for regenerating those areas and so on.	7/21/2014 4:04 PM
12	I think you have a good cross-section of industry and government users and researchers to provide strategic guidance to the program.	7/21/2014 3:55 PM
13	When I was involved with enforcement actions pertaining to the (non) use of best available seed. It became very apparent that the tools available to demonstrate the magnitude (importance) of the non use were very poorly developed. If we are so sure that we need to use such seed (ie. it is the law) we should be able to readily demonstrate the consequences of not using it (breaking the law.). This would require more money to develop a better analysis tool for users and enforcement staff.	7/21/2014 3:12 PM
14	Accessible information to validate increases due to genetic worth	7/21/2014 2:52 PM
15	I believe the impact of Letroderma needle disease will have a huge impact on the mid term and if we do not address it we will be judged as poor managers in the future. This impact is bigger than pine mistletoe.	7/21/2014 2:43 PM
16	I have worked with many quality people in the genetics and tree improvement programs and hope they are well-supported by their agencies in the years ahead.	7/21/2014 2:37 PM
17	FGC should flex their muscles a bit more and lobby that budget cuts are kept to a minimum. Tree Improvement is the most effective silvicultural investment and should not be subject to cuts because of other silvicultural initiative. A bit of a better fight would be appreciated at the level of the provincial Forestry Exec.	7/21/2014 1:58 PM
18	thanks,	7/21/2014 1:51 PM
19	name and contact info	7/3/2014 10:53 AM
20	test	7/3/2014 10:43 AM