

# Filling the Technology Skills Gap

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## *Presentation Overview:*

*Developing a distance education network for BC Community Forest employees – will this help fill the skills gap?*

A couple of questions:

1. Can we bring "blended" technology training to employees throughout the province by using CFA managers as mentors to help supervise field activities related to the courses, and assist employees through the distance education programs?

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*Developing a distance education network for BC Community Forest employees – will this help fill the skills gap?*

2. What are the most useful skills and courses required by CFA employees to:
  - Obtain their initial ABCFP RFT certification which requires a diploma from a recognized institution
  - Augment their technology skills if they are coming from non-traditional forestry programs
  - Obtain advanced technical skills beyond the diploma or bachelor level for professional development

# The big retirement question...

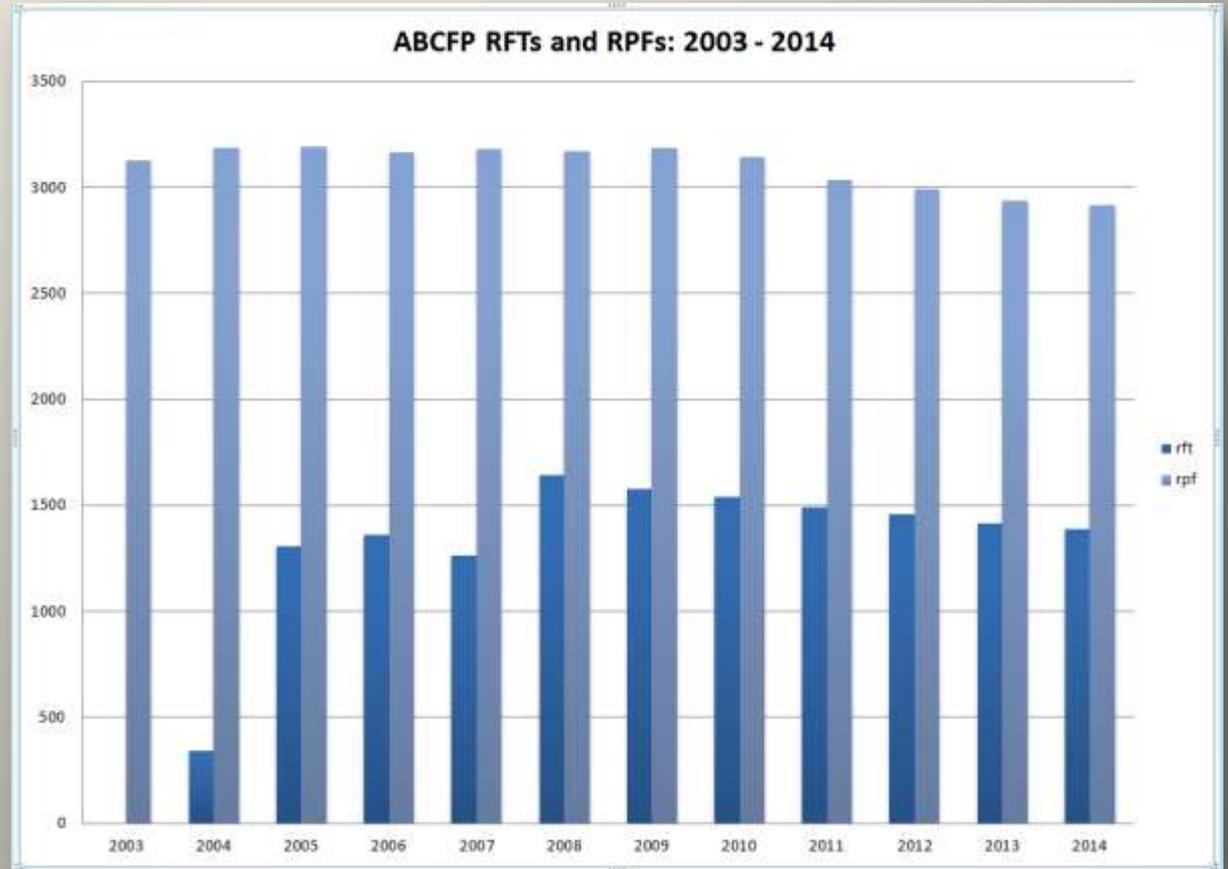
Many of us involved in these meetings are nearing retirement.

- So who is going to train and mentor new employees, and pass along all of those technical and field skills obtained through years of experience?
- How do we bring new people into the groups and into the profession to take our place?
- How do we all keep up with the speed of change?

# ABCFP retirement numbers

Educational pathways to develop technical skills may become important as more people retire, and therefore fewer mentors being available for recent graduates and new employees.

Here are the total numbers of RPFs and RFTs in the Association over the last ten years.

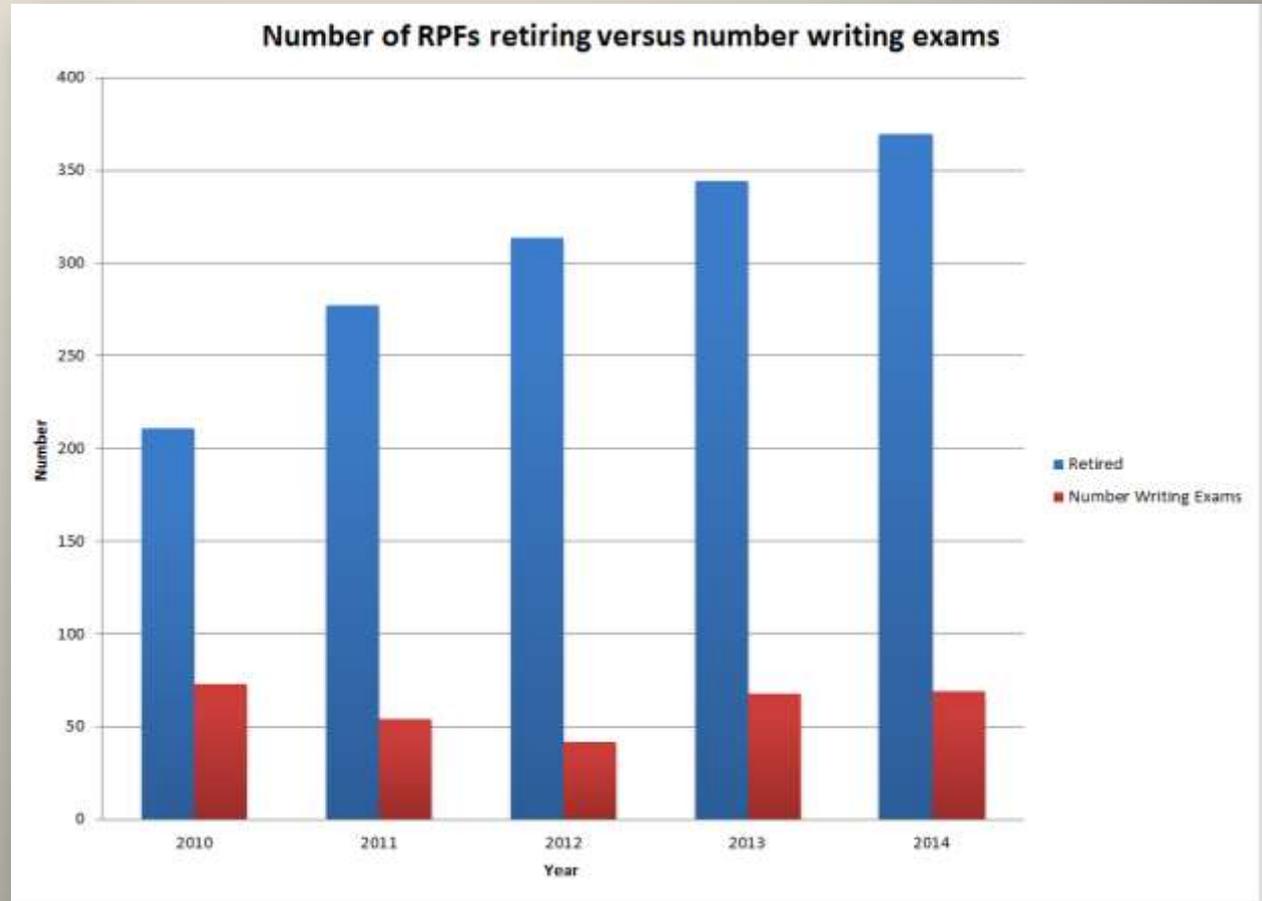


(Source: ABCFP Annual Reports: 2003-2014)

## Retirements versus new members writing exams

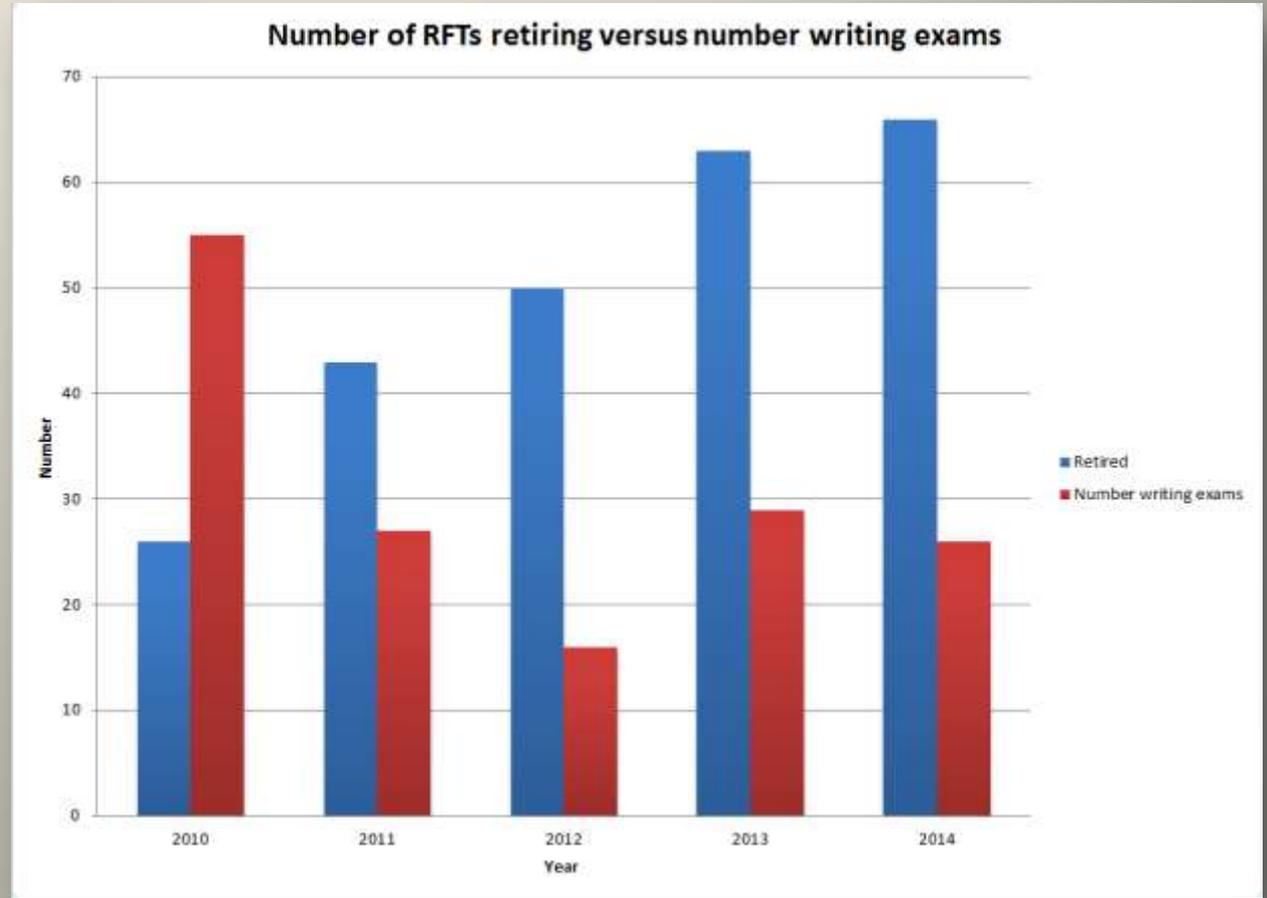
The following two graphs , one for RPFs, and the other for RFTs, show the comparison between those retiring, and those writing exams to enter the ABCFP.

Whether or not these figures are a cause for major concern depends on health and structure of the industry as a whole, but it is something to consider.



# Retirements versus new members writing exams

RFT graph.



# Challenges: Filling the gap

Graduating more students in traditional programs to help fill this gap (*assuming students are attracted to the programs in the first place!*) is too expensive for the institutions to deliver.

(BCIT for example is already graduating 10% more students than it is funded for by the provincial government. The only real way to develop new programs or more students is through part-time studies).

It is getting too difficult and expensive to expect people to leave their homes and employment for two to four years to obtain a diploma or degree.

# Challenges

One strategy may be to develop distance education pathways for technology level training, but this is easier said than done.

- Webinars and short courses are great, but don't necessarily lead to a diploma, degree or certification (RPF, RFT etc.).
- Traditional online learning methods are only useful to a point for field based forest management activities (and who wants to sit in front of a computer all day anyway – I don't.)
- Field based training is labour intensive, and expensive.

## Educational Goals

### – what can we do to help fill the gap?

1. To develop “blended format” forestry distance education alternatives for employees to obtain diplomas and/or become ABCFP RFTs without having to leave their jobs or communities for extended time periods.
2. To provide more advanced technical training for recent NRPs, RPFs, and university/diploma graduates from a variety of programs working at community forests.
3. To develop technical professional development opportunities for all employees.

# Survey Input

What we at BCIT would like is feedback from you.

1. What technology based skills do you and your employees need?
  - We could then at least have some general estimates of demand to take to our administration to actually make this happen.
2. Would you be willing to act as a mentor for new or less experienced employees to work through educational and ABCFP processes?

# 1. Ideas for part-time studies courses and certificates

*Examples* of some individual part-time studies courses (15 to 30 hours each) that could be grouped and integrated to create advanced certificates (300 hours).

## 1. Resource Inventory and Mapping Certificate

- (Individual courses related to inventory principles, and potential tools used to obtain inventory data – survey techniques, software tools, use of drones, LIDAR data, photo based interpretation, intro. to remote sensing techniques, softcopy workstation training etc.)

## 2. Resource Field Measurements Certificate

- (Individual courses related to cruising, scaling, waste and residue, biomass assessment etc.)

## 3. Forest Engineering and Operations Certificate

## 4. Small Tenure Forest Planning and Management Certificate

- (Courses related to the technical tools used to obtain or record public input, social media, managing people in the field, recent board and court decisions etc. related to Community Forests, First Nations Tenures, Woodlots, Community Watersheds etc.)

## 5. Integrated GIS and Resource Management Modelling Techniques Certificate

- (Courses related to growth and yield, visual landscape management, hydrology, climatology, population dynamics, fire behaviour etc.)

## 2. How might a joint BCIT/CFA/ABCFP distance education mentorship program might work?

### Educational Planning Phase



CFA Manager assesses employee interest and their employee skill requirements



CFA Manager completes ABCFP RFT Competency spreadsheet



CFA Manager and BCIT Part-time Studies Coordinator create educational plan

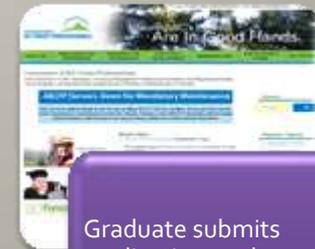
### Program Delivery Phase



CFA mentors helps a group of students through online learning, and provide sign-off for field task related to course assignments.



Employee/student completes Diploma or Advanced Certificate



Graduate submits application package to ABCFP to start RFT certification process

# ABC FP RFT Spreadsheet

1. Here is the format of the certification spreadsheet. The competencies are very detailed, which actually makes it easier to review an applicants skills. It also means it is easier to access and include skills obtained from actual field experience rather than just an applicants educational background. A version of this spreadsheet has been in use by the ABCFP for close to 10 years.
2. CFA employees would fill out the Self Assessment section, then CFA managers could complete the Confirmation section in the CFA/BCIT model being proposed in this presentation. Based on the results, we could come up with an educational plan to fill in the gaps.

Core Competency Outcomes Grouped By Stage and Tasks											
COMPETENCY STANDARDS	RELEVANT COMPONENTS	Performance Indicators	Self Assessment				Confirmation				
			Can not complete	Can describe the importance of the task	Can complete task with supervision	Can complete task without supervision	YES			NO	N/A
							Task Program	Work Experience	Other Evidence		
<b>Office Preparation For Field Operations and Data Acquisition</b>											
<b>Outcome Statement:</b> <i>Acquire and prepare materials and equipment and interpret information necessary to access a field site to legally and safely implement a data collection plan</i>											
<b>Office Based Trip Planning</b>		<i>Acquire, prepare, and interpret material necessary to plan travel and access to field site</i>									
1	<b>Road maps</b>	<i>Acquire and access available road map data and information for planning site and efficient access to project site</i>									
2	<b>Topographic maps</b>	<i>Use topographic maps and appropriate equipment to access areas and travel time</i>									
3	<b>Imagery and photographs</b>	<i>Use aerial photographs or orthophotos to determine field navigation routes, and assess field conditions</i>									
4	<b>GNSS Vectors and Routes</b>	<i>Interpret maps and imagery to identify GNSS waypoints that help guide you to the field location</i>									
5	<b>Indicatal road use</b>	<i>Ensure that your GPS radio has appropriate frequency for local expected roads</i>									
6		<i>Acquire information about travel regulations, restrictions, and closures</i>									