COLLEGE OF APPLIED BIOLOGY
Professional Accountability

The Role and Scope of Practice of Registered Biology Technologists

While RBTechs typically work within a team that includes RPBios, other resource professionals, technicians, and others, Rule 7.4.1.2.3 allows for independent practice by RBTechs as set out in Schedule 5.

"Independent Practice" is defined as activities/documentation not requiring the supervision or further sign off by an RPBio, and for which the RBTech may assume full, autonomous accountability.

In terms of areas of independent practice, RBTech functions and accountabilities are generally more narrowly defined and focused than those of RPBios. While the functions and accountabilities of an RPBio encompass the full depth and breadth of applied biology the role of RBTechs is influenced by shorter time frames, specific area issues, practical skills, and operating within established technical parameters, guidelines and protocols.

The College respects that there are those individual RBTechs whose skill and experience in a particular area approximates that of an RPBio. These situations will be examined as they are brought to the attention of the College, and the College may consider structuring a special permit or limited license category in future.

Consistent with the discussion above, and following generally accepted protocols, guidelines and procedures or those designed and signed-off by an RPBio specific to the project at hand, RBTechs may independently:

- Conduct field, laboratory, or other forms of data collection. This includes the collection, identification, and appropriate handling/storage of biological specimens.
- Compile and provide preliminary analysis of data
- Provide reports which may contain direct, limited conclusions based on the data collected and its analysis.
- Provide judgement on works requiring monitoring of activities to ensure compliance
- Install, maintain and calibrate field and laboratory equipment.
- Supervise others conducting the above activities.

Practice Examples

The following practice area descriptions and examples do not provide a comprehensive listing nor a complete definition of the scope of practice for RBTechs; rather they are intended to provide a generally accepted understanding of existing roles and responsibilities. These guidelines are meant for the typical RBTech and may not adequately reflect the working relationships that exist between very experienced and accomplished RBTechs and RPBios. The following examples are based on the premise that College members practice only within their specific, individual competencies and in accordance with the College Act and the Rules. Simply because a particular

practice is specifically mentioned as an area of practice does not mean that an individual necessarily has the competency to work independently in that area. The following narrative examples and charts are presented for illustrative purposes and are not intended to set out a complete list of duties conducted by RBTechs.

Narrative Examples:

Example 1. Fish Passage through Culverts

A RBTech is hired by a forest company to assess potential fish passage through a number of culverts. The RBTech has a fisheries-related technical diploma and has taken specific training in the application of the fish passage assessment criteria of the Ministry of Environment, and has experience applying it. It entails measuring specified habitat parameters such as channel width, substrate, etc. The RBTech conducts the survey following the protocol, applies the decision criteria in the assessment of the likelihood of each culvert passing fish. He writes, signs off, and submits the assessment report, along with the supporting data, to the client/employer.

The same forest company then wishes to establish fish habitat protection/mitigation plans as part of the Forest Stewardship Plan and/or certification processes. This requires using the culvert assessment conducted by the RBTech, as well as a novel approach to estimating fish habitat potential through-out the company operating area, and determining likely population gains from culvert replacement vs. population enhancement. This task requires a depth of fish habitat and population biology knowledge beyond the practice scope of an RBTech and would require an RPBio. The RPBio could, however, rely on the culvert assessments done independently by the RBTech.

Example 2. Population Genetics Laboratory

A RBTech is employed to conduct and supervise day-to-day genetics lab work conducted by a team of technicians for use in population ecology studies and legal cases (such as wildlife poaching). The RBTech has educational background in lab procedures and underlying theory and has been trained in specific analysis and quality assurance protocols to be applied by the lab. If the RBTech has sufficient experience, sign-off of the direct lab results may be independently completed by the RBTech. For example, samples are analyzed to identify the species and sex of tissue samples using established genetic markers.

More complex interpretations of the lab results, or lab issues that fall outside standard protocols, are referred to the RPBio. For example, the lab results are being applied in a complex case of identifying potential sub-populations to be used in a species-at-risk recovery plan. The RBTech could be responsible for the lab work, but the RPBio would do the interpretation and supervise further non-standard lab work.

Example 3. Terrestrial Ecosystem Mapping

A consulting firm is contracted to conduct a terrestrial ecosystem mapping project in a watershed, applying the established provincial classification

system. A RBTech is sub-contracted to conduct the field sampling. The RBTech has basic educational background in soils, plant identification, and landforms, has completed specific training in ecosystem classification and interpretation, and has several years of experience under supervision. The RBTech conducts the field work following the sampling regime required by the client, signs off on that task, and submits the results to the client (typically an RPBio or RPF) who then relies on it for completing the mapping. Note that the RBTech is taking independent responsibility for the field data, and thus the 'client' who is taking responsibility for the final mapping is not professionally supervising the RBTech.

Example 4. Wind Power Impact Assessment

A consulting company is hired to assess potential for bird and bat impacts at a proposed generating site. An experienced RBTech trained to follow the established company protocol approved by an RPBio is assigned the data collection project involving use of radar and audio-visual recordings. The RBTech tests, calibrates, and operates the equipment, collects observations, assigns probable species identification, and collates and summarizes the data. The resulting data and summary report is signed off by the RBTech and either provided to the client (e.g., a government agency RPBio) or to the company RPBio for interpretation and management recommendations. The RBTech may be involved in assisting in the management interpretations, but the primary accountability (sign off) would be by the RPBio.

Table Comparisons

Table 1. Field Data Collection

Activity	RPBio	RBTech
Field data collection to support ecosystem mapping models	1. Design field sampling plans, determine goals and objectives and sampling methods 2. Monitors field data collection process 3. Quality control of final field data 4. Quality control of digital field data 5. Determines analytical processes to process field data 6. Interprets results of field data analysis	1. Implements the sampling plan 2. Liaison with GIS personnel to create access maps 3. Collects and/or supervises field data collection 4. Quality assurance of field data 5. Field data entry to digital data bases 6. Quality control of digital field data bases 7. Summarizes field data under instruction from Professional

Table 2 Terrestrial Ecosystem Mapping

Activity	RPBio	RBTech
Terrestrial Ecosystem Mapping	1. determines mapping entities and gets approval from Regional Ecologist 2. insures mappers understand mapping standards and protocol 3. internal map quality assurance	1. creates map working legend based on map entities 2. interprets polygons following standards and protocol 3. enters data into a data base with approved structure 4. checks mapping and data bases for consistency

Table 3 Field Sampling Program

Activity	RPBio	RBTech
Field Sampling Program	1. initiate the study design and field location limitations 2. interpret the compiled results 3. responsible for the conclusions and final report	1. undertake the field sampling program in a professional manner, highlighting any possible biases that may result from site conditions 2. trouble shoot design in the field to compensate for site conditions (ie edge effects etc.) 3. be able to react to safe handling requirements of all field components, including animals 4. undertake aspects of analysis, data compilation, and maintain chain of custody

Table 4 Stream Assessment

Activity	RPBio	RBTech
Stream Assessment	1. Determines scope and study area with rationale for selection; 2. Quality control for field measurements; 3. Ensures completeness of records and reporting 4. Completes evaluation with recommendations of site features and their functions.	1. Prepares records materials 2. Ensures sampling gear in working order 3. Undertakes field measurements in accordance with protocol 4. Handles/releases/preserves all specimens to protocol(s) 5. Verifies accuracy in data recording and submission 6. Recognizes and reports on site features and anomalies.

Table 5 Applied Research

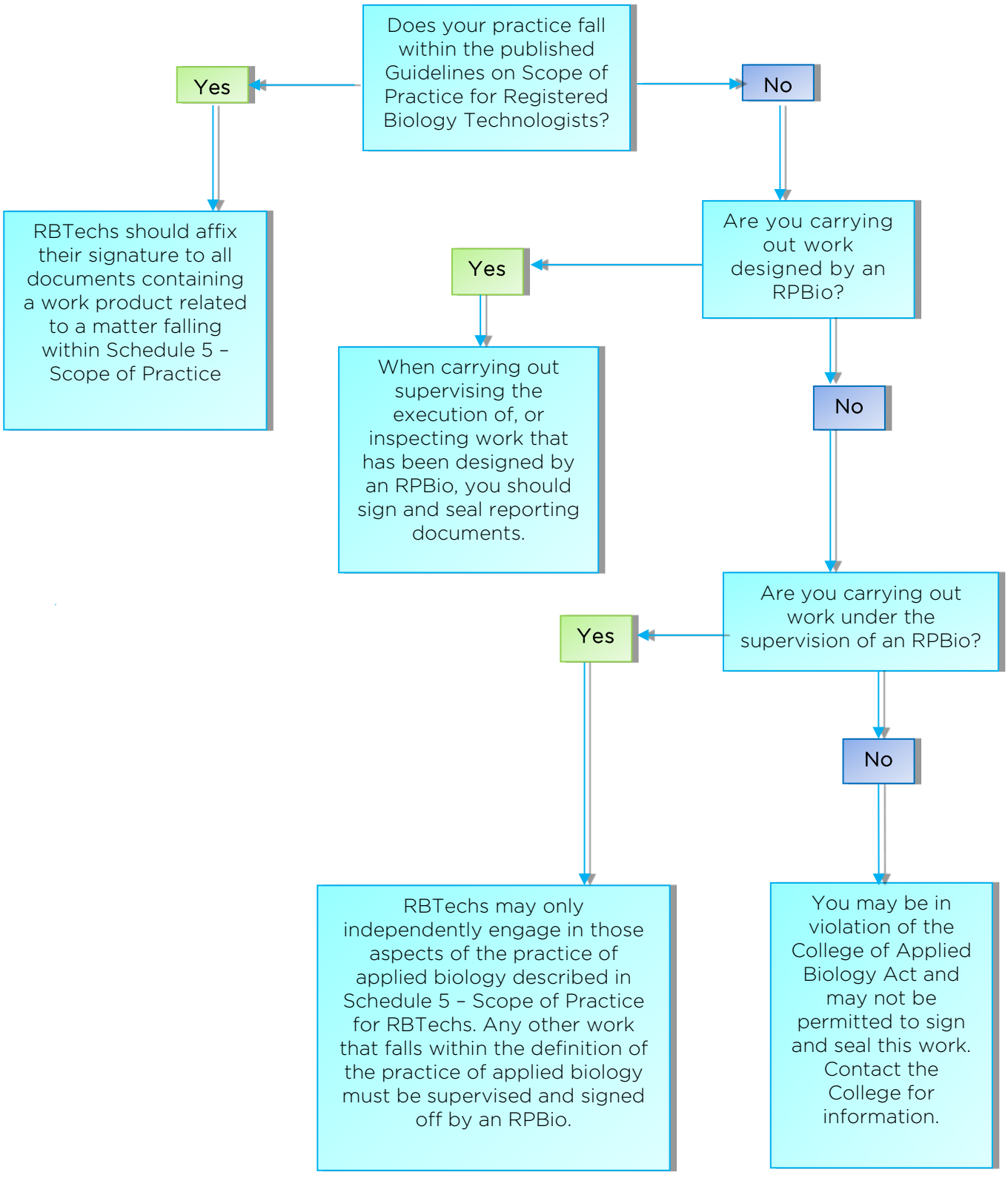
Activity	RPBio	RBTech
Applied Research Program	1. investigates theory behind the study 2. designs sampling program and protocols; trains others as required 3. interprets data and/or provides sophisticated data analysis 4. writes final report	1. carries out project activities under supervision of RPBio 2. follows established protocols in sampling, etc 3. provides basic data analysis 4. provides preliminary draft report or data report to RPBio.

Table 6. General Project Duties

Project Phase	RPBio	RBTech
Issues identification and assessment, negotiation, stakeholder and First Nation consultation etc.	RPBio ensures that the project team has the necessary qualifications and experience to complete the project. Establishes procedures and protocols, leads consultation. Project phase involves providing oral advice which is often reflected in the experimental design of a project	Assist with issue identification and assessment, consultation under the direction of an RPBio
Experimental design	Identifies parameters to be included in an experimental design. RPBio prepares work plan, identifies project team members, ensures that project team has sufficient qualifications and experience to implement the various project phases. RPBio ensures that staff are adequately trained if any gaps exist. RPBio confirms that experimental design is consistent with the project objectives.	Selects sampling protocol to apply and/or methodology (i.e. identifies appropriate standards) based on established parameters May recommend appropriate sampling intensity. Provides input regarding how data should be collected, analyzed and reported.
Logistical planning and data collection	Prepares safety plan (note no distinction between RPBio and RBTech) Ensures that data collection is consistent with standards and best practices as well as obligations under a permit etc.	Prepares safety plan Collects data in accordance to generally accepted or published standards. Responsible for logistics, ensuring that equipment is functional and calibrated. Troubleshoots equipment and data collection while in the field

Data analysis	Implements quality control procedures	Summarizes and sorts data in accordance to the experimental design and workplan Provide basic statistical or descriptive statistical analysis in accordance with experience level
Data interpretation	Ensures that data interpretations are accurately founded on the data collected.	Provides interpretations on the data based on established protocols
Reporting	Provides overall quality control function. Ensures that content of deliverables are correct and in accordance to all phases of the project.	Prepares technical data reports Drafts interpretive reports for RPBio review and consideration

RBTech Practice Summary



RBTech Signing and Sealing Guidelines

Rule 13.1 sets out that only Active Members in Good Standing and Temporary Permittees (NB: at this time the College does not have a Temporary Permittee category) may sign and seal documents. Rule 13.2 sets out that "documents" consist of all publications, monographs, reports, special letters, plans and drawings; and all such other work product (collectively referred to as a "Document" or "Documents") that he/she prepares or are prepared under his/her supervision. As RBTechs will be "Active Members", this Rule will apply equally to RPBios and to RBTechs.

RBTechs are permitted to work independently in limited aspects of applied biology. Where the RBTech is working independently, the member is entitled and encouraged to sign and seal all products. Where the RBTech is working outside of the provisions of Schedule 5 (Independent Practice Provisions), the RBTech cannot sign or seal the final professional document or plan for which the work was done, nor can an RBTech sign off on elements such as experiment design, sampling intensity, conclusions and recommendations. The RBTech is, however, encouraged to sign or seal recommendations he or she makes to the RPBio who supervised or commissioned the work and who is accountable for the project.