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ROYAL CANADIAN MOUNTED POLICE • GENDARMERIE ROYALE DU CANADA

THE NATIONAL DNA DATA BANK OF CANADA

ANNUAL REPORT 2021/2022

Royal Canadian Mounted Police | Gendarmerie royale du Canada

Canada

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NATIONAL DNA DATA BANK OF CANADA

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MESSAGE FROM THE COMMISSIONER

ROYAL CANADIAN MOUNTED POLICE

I am pleased to present the 2021-2022 National DNA Data Bank (NDDB) annual report and to acknowledge the incredible work of the NDDB and all of its partners, particularly over the last two years. During this period, the NDDB continued to adapt and maintain its operational and technological services to help serve and protect Canadians, even during the global pandemic.

This unprecedented time in history impacted everyone on various levels. Personally, people struggled to secure care for dependents when schools closed. Professionally, organizations had to pivot to ensure employees were safe, secure, and able to continue working given their own unique circumstances. At times, this involved providing technological support to employees to help facilitate the transition to working remotely.

The NDDB operates in a unique controlled environment and uses highly specialized equipment, which made it impossible for hands on laboratory work to be done remotely. Instead, protocols to safely and efficiently keep essential laboratory operations running were implemented and employees at all levels remained flexible and committed to supporting investigations.

Despite the restrictive measures introduced by the pandemic, the NDDB now stores more than 600,000 DNA profiles in the criminal indices. This has produced over 79,000 matches that have helped law enforcement agencies identify suspects and victims, link crime scenes, and solve active cases.

The National Missing Persons DNA Program also continues to grow. It now contains approximately 1,600 DNA profiles in its database. We continue to work with partner agencies so that we can provide answers to the families and friends of missing persons when possible.

The feature article and success stories in this report highlight how the NDDB forged ahead and continued to assist the law enforcement and criminal justice communities during the pandemic. Their achievements are impressive and I am proud of the work and dedication of all NDDB employees, which speaks to their resiliency and continued service to Canadians.

Brenda Lucki
Commissioner

QUICK FACTS

Convicted Offender Samples Received in 2021/22[1, 2]	15,397
Increase in the Crime Scene Index in 2021/22	12,278
Offender Hits (Convicted Offender to Crime Scene) in 2021/22	5,031
Forensic Hits (Crime Scene to Crime Scene) in 2021/22	591
Associations made by the NDDB in 2021/22 (Number of Offender and Forensic Hits)	5,622
Associations made by the NDDB since June 30, 2000 (Number of Offender and Forensic Hits)	79,372
Human Remains Hits – Putative identifications made since March 6, 2018[3]	40

[1] 2021/22 refers to the NDDB's fiscal year from April 1, 2021 through March 31, 2022.

[2] The global pandemic continued to impact the volume of submissions to the NDDB throughout 2021/22.

[3] The date the humanitarian indices came into force.

ABBREVIATIONS

CCRTIS	Canadian Criminal Real Time Identification Services
CPIC	Canadian Police Information Centre
CODIS	Combined DNA Index System
COI	Convicted Offenders Index
CSI	Crime Scene Index
DNA	Deoxyribonucleic acid
HRI	Human Remains Index
MPI	Missing Persons Index
NCMPUR	National Centre for Missing Persons and Unidentified Remains
NMPDP	National Missing Persons DNA Program
NDDB	National DNA Data Bank
RMI	Relatives of Missing Persons Index
STaCS	Sample Tracking and Control System
VI	Victims Index
VDI	Voluntary Donors Index

ESSENTIAL SERVICES THROUGHOUT A WORLD WIDE PANDEMIC

NDDB employees were at work when the stay at home orders came down in late March 2020. They were taking in DNA submissions from convicted offenders and from missing person investigations, and maintaining essential services to support Canadian law enforcement agencies.

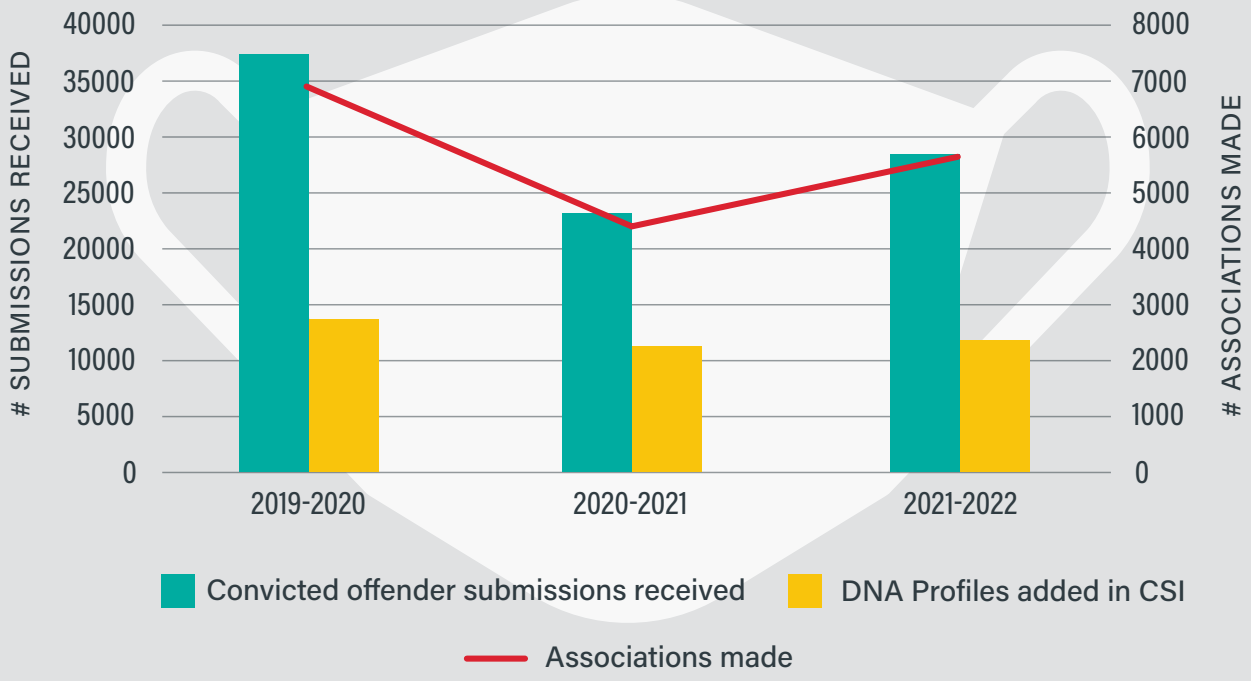
Within a few weeks, the NDDB, in close consultation with the Divisional Emergency Operations Centres, established protocols to safely and effectively keep essential operations running. As an accredited and secure DNA facility, decontamination procedures and Personal Protective Equipment were already in place to ensure the proper handling of DNA samples; however, physical distancing and close monitoring of product supply chains introduced new measures that needed to be adhered to. Managers created rotating work schedules for operational employees, including non-routine hours and the provision of IT tools necessary to securely meet, communicate, perform administrative work, and in some cases work completely from home.

During this time, the criminal justice system faced similar challenges. Courts were not operating as usual thus reducing the number of DNA orders issued. In addition, in-person attendance at court (required for effective DNA collection in many court houses) was prohibited or very limited during the first few months of the pandemic. Moreover, police resources had to be coordinated in response to the pandemic and maintain essentials duties.

Submissions to the NDDB continued to be affected during the pandemic. Compared to 2019-20, the submissions to the NDDB were reduced by 38% in 2020-21 and 24% in 2021-22. The lower decrease in 2021-22 shows a gradual return to normal service levels.

Public forensic laboratories at the RCMP and in Ontario and Quebec also continued to operate at varying levels of capacity throughout the pandemic. The forensic laboratories' DNA crime scene profile submissions to the national index were reduced by 19% in 2020-21 of what was sent in 2019-20 and 11% in 2021-22. The NDDB made 4,327 DNA matches in 2020-21 and 5,622 DNA matches in 2021-22 compared to 6,857 matches in 2019-20. Again, these numbers suggest a gradual return to pre-pandemic operations The chart below illustrates the number of convicted offender submissions received, the number of profiles added to the crime scene index (CSI) and number of associations made during the past 3 years.

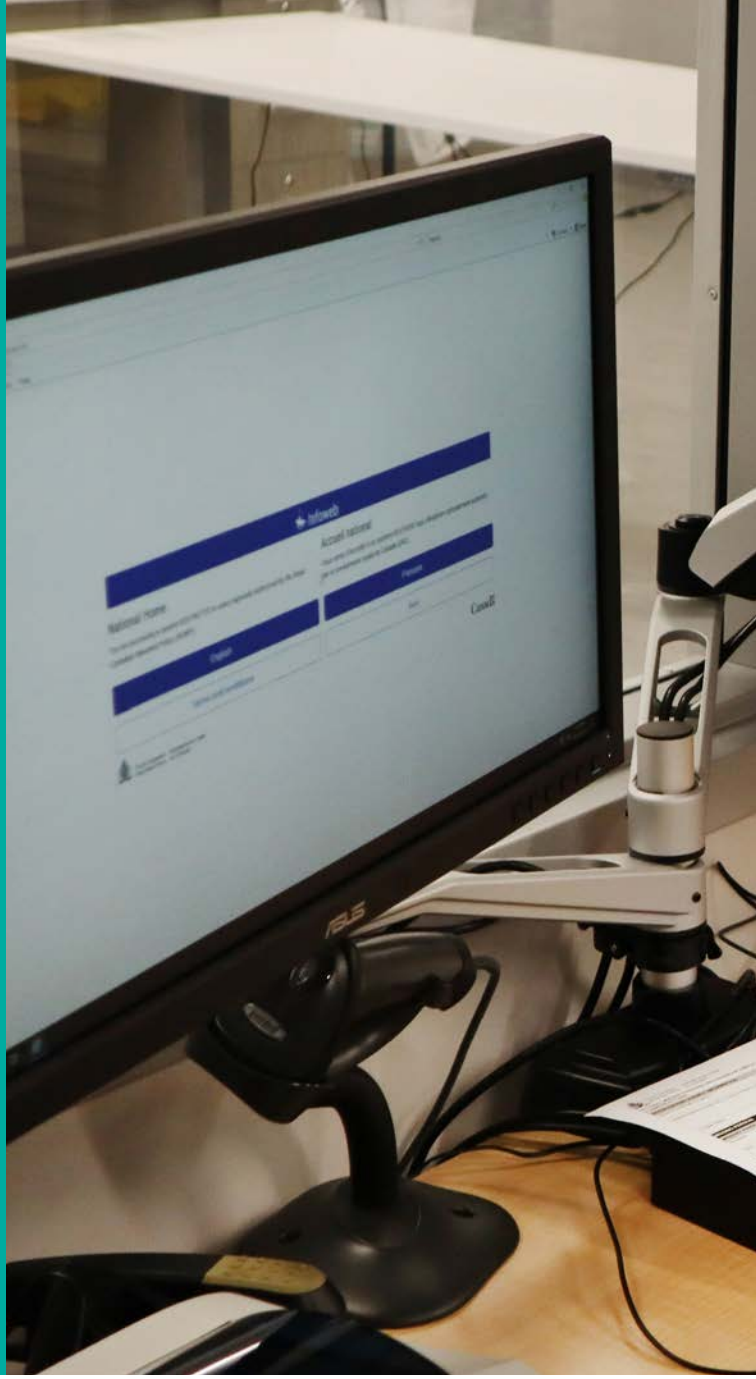
IMPACT OF COVID ON **NDDB**



The National Missing Persons DNA Program also continued to operate at varying levels of capacity throughout the pandemic. Since its creation, the NDDB has reported 40 DNA associations that have assisted in the identification of unidentified human remains.

Two years later, with many in the Canadian population becoming fully vaccinated, restrictions on gathering and attendance are gradually being lifted. There has been nothing positive about the pandemic, except that the NDDB, and its dedicated personnel, have weathered the storm and has come out stronger and more prepared should another emergency present itself.

THE NATIONAL DNA DATA BANK



The NDDB is a centralized collection of over half a million DNA profiles that helps investigators across the country solve a range of crimes. The main goals are simple:

- link crime scenes across jurisdictional boundaries;
- help identify or eliminate suspects;
- determine whether a serial offender has been involved in certain crimes; and
- assist investigators, coroners and medical examiners to find missing persons and identify human remains.

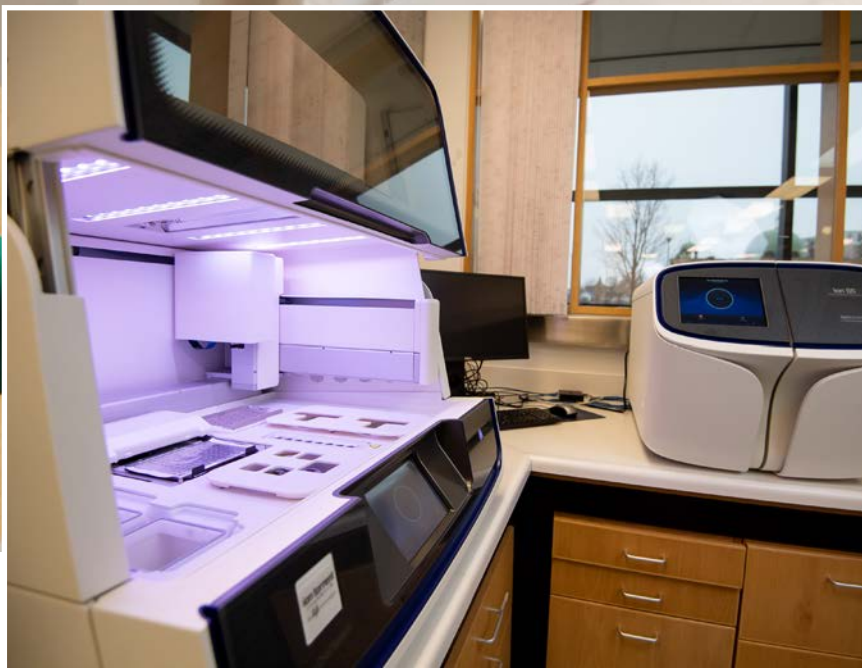
On behalf of the Government of Canada, the Royal Canadian Mounted Police (RCMP) is the steward of the NDDB, which operates for the benefit of Canada's entire law enforcement community.

The *DNA Identification Act* allows the NDDB to maintain the following indices (databases):

- Convicted Offenders Index (COI)
- Crime Scene Index (CSI)
- Victims Index (VI)
- Voluntary Donors Index (VDI)
- Missing Persons Index (MPI)
- Relatives of Missing Persons Index (RMI)
- Human Remains Index (HRI)

The COI, CSI, VI and VDI provide assistance to criminal investigations as follows:

- Comparing DNA profiles found at crime scenes against the DNA profiles of convicted offenders (CSI to COI). When a match is made, it can help identify a suspect. An "offender hit" is the term used to describe this type of DNA match. If no match is made, this information can also help eliminate suspects.
- Comparing DNA profiles found at different crime scenes (CSI to CSI). When a match is made between DNA profiles found at separate crime



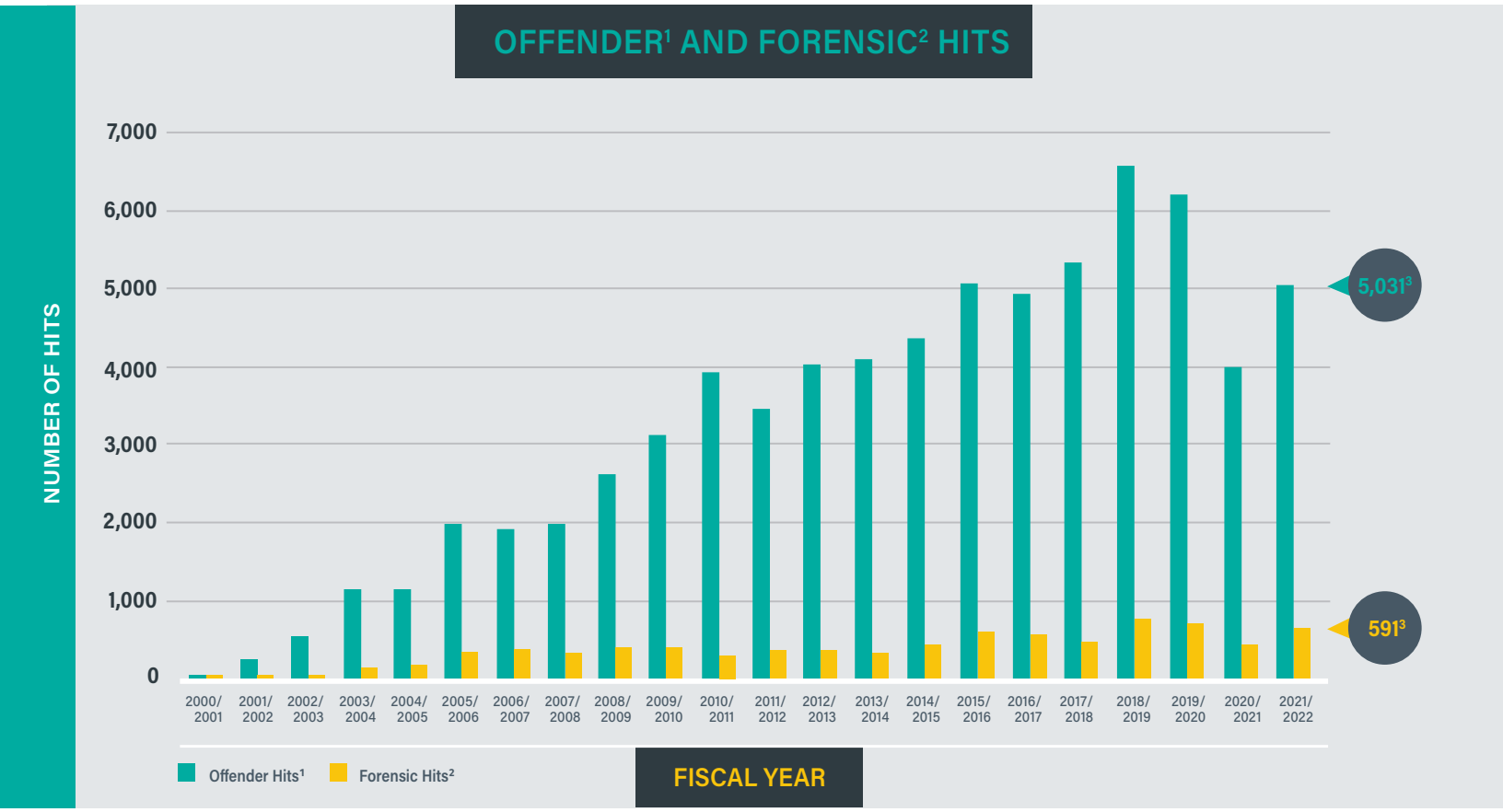
scenes, it can help link crimes for which no suspects have been identified. This determines whether a serial offender is involved in a number of cases. A "forensic hit" is the term used to describe this type of DNA match.

- Comparing DNA profiles contained in the VI and the VDI. This helps to identify unknown victims, link crime scenes together through victim and voluntary donor DNA profiles, or eliminate the voluntary donors from the focus of an investigation. The VDI can also be used for elimination purposes in humanitarian investigations.

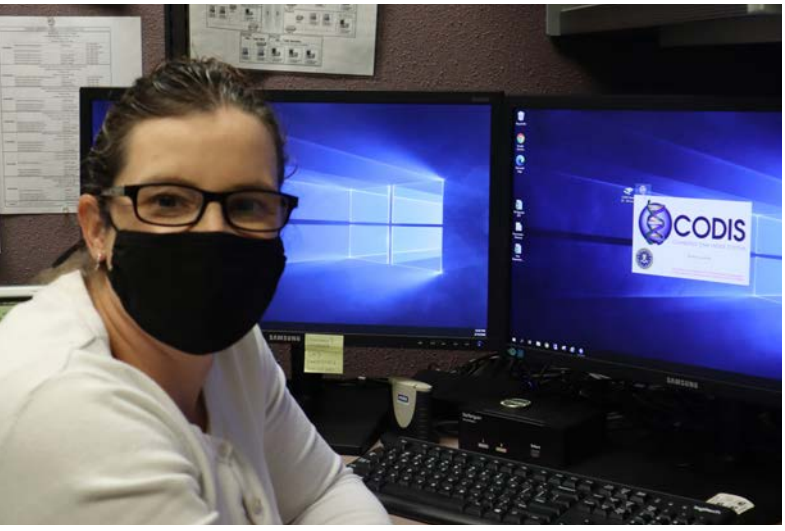
As part of the National Missing Persons DNA Program (NMPDP), the NDDB maintains the MPI, RMI and HRI to support humanitarian investigations at the national level. These indices allow DNA profiles developed from biological samples and other items collected and submitted by police, coroners and medical examiners to be compared to other DNA profiles in the NDDB. The DNA profiles in the RMI are only compared to those in the MPI and the HRI.

OFFENDER AND FORENSIC HITS

When the NDDB first began operating in 2000, it contained few DNA profiles. As more DNA profiles are added to the NDDB over the years, a greater number of matches are made in less time.



[1] An offender hit is a match between DNA found at a crime scene and DNA of a convicted offender.
[2] A forensic hit is a match of DNA profiles found at separate crime scenes.
[3] The global pandemic continued to impact the volume of submissions to the NDDB throughout 2021/22.



CONVICTED OFFENDER SUBMISSIONS

Every year, the NDDB processes convicted offender submissions consisting of:

- biological samples (used to generate DNA profiles that are entered into the Convicted Offenders Index (COI)); or
- Endorsement submissions (fingerprints and documentation for convicted offenders whose DNA profiles are already in the COI).

Before executing a new DNA order or authorization, a police officer must query the Canadian Police Information Centre to determine whether a

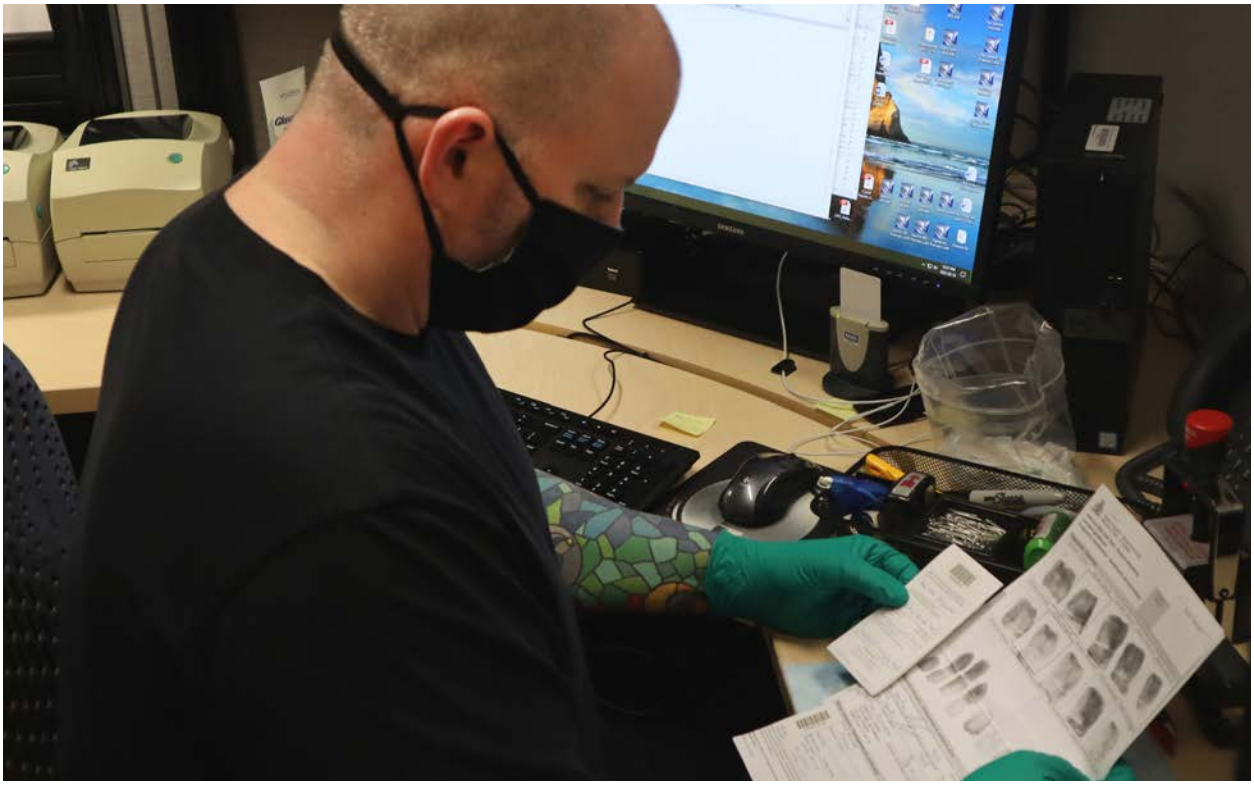
convicted offender's DNA profile is already in the NDDB. Endorsements therefore consist only of fingerprints and documentation. The endorsement process ensures that a convicted offender's DNA profile will remain in the NDDB if:

- the conviction for which the original DNA order was made is being quashed on appeal;
- the original DNA order/authorization is being quashed on appeal; or
- the retention period is expiring because the person was either:
  - convicted as a young person; or
  - previously discharged under Section 730 of the *Criminal Code* of a designated offence. (Note: this condition was removed as of March 6, 2018 when amendments to the *DNA Identification Act* came into force).

When the NDDB receives either a biological sample or an endorsement submission, the documentation is reviewed to ensure that the DNA order was issued for a criminal offence for which DNA can legally be collected and that the offender's personal information required for the submission is complete and accurate.

All convicted offender submissions are recorded in the NDDB's internal tracking system without any of the offender's personal information.

All convicted offender submissions are recorded in the NDDB's internal tracking system without any of the offender's personal information. Documentation for convicted offender biological sample and endorsement submissions are sent to the RCMP's Canadian Criminal Real Time Identification Services so they can be certified; associated with an individual by fingerprint comparison; and recorded in the individual's criminal record.

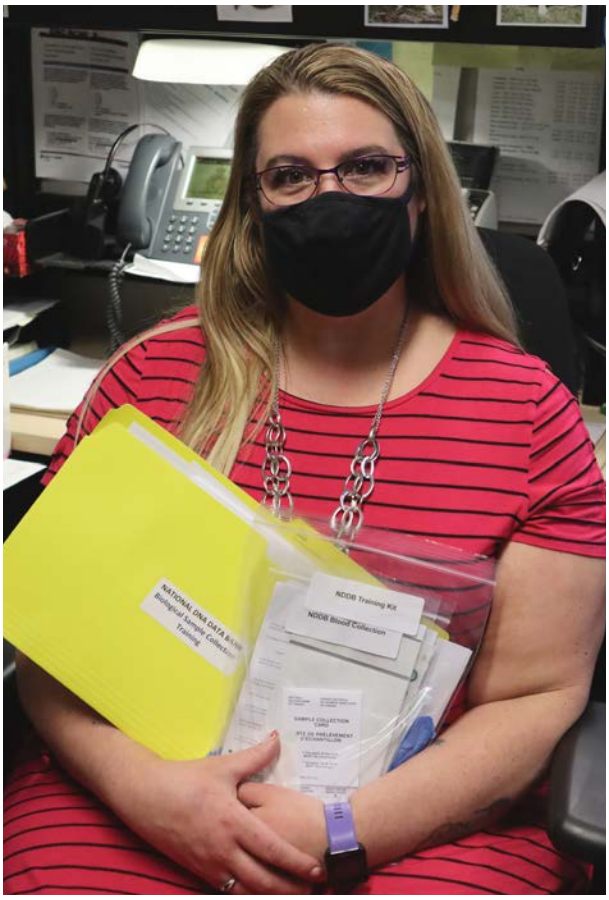


PROCESSING OF BIOLOGICAL SAMPLES

Convicted Offender Samples

When someone is found guilty of committing a designated offence for which a biological sample can be obtained, the judge has the choice to issue a DNA order. However, for some designated offences, such as murder, the judge must issue an order. A trained peace officer will then collect a biological sample from that person by taking a blood, buccal or hair sample. The NDDB is responsible for processing all convicted offender biological samples and entering the DNA profiles derived from these samples into the Convicted Offenders Index.

Kits designed specifically for the NDDB are used for collecting biological samples from offenders. There are three types of kits available:



- **Blood:** The sample is obtained by using a sterile lancet to prick the fingertip
- **Buccal:** The inside of the mouth is rubbed with a foam applicator to obtain skin cells
- **Hair:** Six to eight hairs are pulled out with the root sheath attached

Although all three types of biological samples have been legally approved for collection, more than 98% of samples taken from convicted offenders are blood samples. The NDDB encourages the collection of blood samples because blood has proven to be more reliable than hair or buccal samples in generating high-quality DNA profiles.

Crime Scene and Victim Samples

Crime scene DNA evidence is collected by police investigators and examined by forensic laboratories across Canada to generate DNA profiles. Only a DNA profile derived from a designated offence can be added to the NDDB's Crime Scene Index (CSI) or the Victims Index (VI). The NDDB is also responsible for removing victims' DNA profiles in accordance with the *DNA Identification Act*. The following public forensic laboratories are authorized to add DNA profiles to the CSI and VI:

- The RCMP National Forensic Laboratory Services in Ottawa, Edmonton and Surrey;
- The Centre of Forensic Sciences in Toronto and Sault Ste. Marie, Ontario; and
- The Laboratoire de sciences judiciaires et de médecine légale in Montréal, Quebec.

Voluntary Donor Samples

Samples collected from voluntary donors during the course of a criminal investigation of a designated offence are processed by a public forensic laboratory. If the resulting DNA profile provides a potential benefit to the investigation, it is added to the NDDB's Voluntary Donors Index (VDI). Voluntary donor samples collected as part of a humanitarian investigation are provided to the NDDB for processing and added to the VDI. The NDDB is responsible for removing voluntary donors' DNA profiles in accordance with the *DNA Identification Act*.

Missing Persons, Relatives of Missing Persons and Human Remains Samples

Processing of samples from missing persons, relatives of missing persons and found human remains falls within the National Missing Persons DNA Program (NMPDP). This program is a partnership between the National Centre for Missing Persons and Unidentified Remains (NCMPUR) and the NDDB. The role of NCMPUR is to act as a single point of contact for investigators. As such, NCMPUR authorizes the submissions to the NDDB for missing persons and human remains investigations.

Under the *DNA Identification Act*, the NDDB is responsible for maintaining the humanitarian indices and also for:

- receiving biological samples from submitting agencies and developing DNA profiles;
- receiving DNA profiles from approved laboratories for technical review;
- interpreting and comparing DNA profiles from human remains, relatives of missing persons and personal belongings from missing persons;
- adding and removing DNA profiles in the Human Remains Index, Relatives of Missing Persons Index and Missing Persons Index in accordance with the legislation;
- issuing and explaining kinship and identity association reports; and
- providing scientific advice and support to NCMPUR and investigators, as required.

To better serve the NMPDP, the NDDB introduced technologies for the isolation and characterization of DNA. Specifically, it introduced procedures for the development of DNA profiles from personal effects and hard tissue samples, such as bone and teeth. In addition, the NDDB validated procedures to analyze the Y-chromosome and utilize an advanced technology using Next Generation Sequencing, which allows for mitochondrial DNA analysis.

COMPARING DNA PROFILES

The DNA profiles in the NDDB are compared using the Combined DNA Index System (CODIS), which is a secure network and software program developed by the Federal Bureau of Investigation and the United States Department of Justice, and provided to the RCMP for use by the NDDB. CODIS has become an internationally accepted tool for many forensic laboratories, allowing DNA profile information to be compared using a standard, secure format. In Canada, the NDDB uses CODIS for daily comparisons of DNA profiles. Each new DNA profile entered into one of the NDDB's DNA indices is automatically compared against all existing profiles contained in other DNA indices as permitted by the *DNA Identification Act*.

The NDDB shares DNA information with international investigating authorities through an international DNA Information Sharing Agreement with INTERPOL.

INTERNATIONAL PARTICIPATION

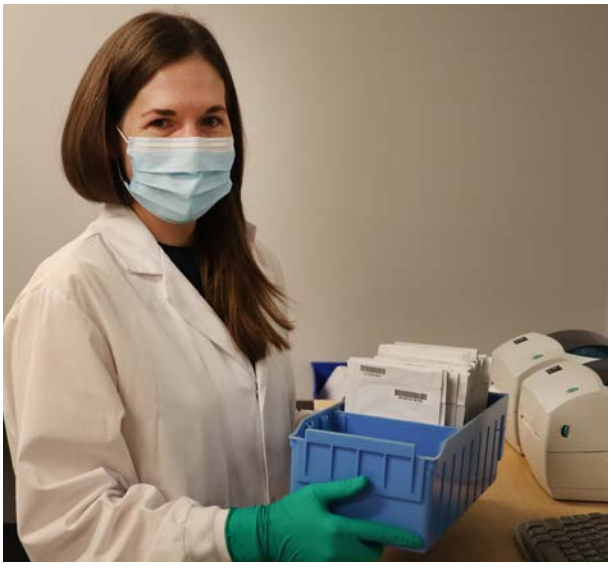
The NDDB shares DNA information with international investigating authorities through an international DNA Information Sharing Agreement with INTERPOL. This agreement is approved by the Government of Canada and is limited to investigations and prosecutions of designated offences or investigations involving missing persons and unidentified human remains.

Since the first international agreement was signed in 2002, the NDDB has received 1,940 incoming international requests related to criminal investigations to search the Convicted Offenders Index (COI), the Crime Scene Index (CSI), the Missing Persons Index (MPI) and the Human Remains Index (HRI). These searches produced 9 offender hits and 12 forensic hits. Furthermore, the NDDB has sent 366 requests related to criminal investigations to other INTERPOL countries for comparison to DNA profiles developed from crime scene samples, resulting in 8 offender hits and 2 forensic hits.

In 2018, the agreement was updated to allow international comparisons of DNA profiles from missing persons and unidentified human remains. Since then, the NDDB has received 92 incoming international requests to search missing persons and unidentified human remains profiles against the COI, the CSI, the MPI and the HRI. The NDDB has sent 38 requests to other INTERPOL countries for comparison of DNA profiles developed from missing persons and unidentified human remains. The incoming requests resulted in one putative identification and the outgoing requests also resulted in one putative identification.

PRIVACY OF INFORMATION

The *DNA Identification Act* specifies that DNA profiles in the NDDB's indices can only be used for law enforcement or humanitarian purposes. The Act also clearly states that the DNA profiles in the Relatives of Missing Persons Index can only be compared to DNA profiles in the Missing Persons Index and Human Remains Index.



As an additional safeguard to protect the privacy of an individual, when a convicted offender's DNA sample arrives at the NDDB, the donor's identity is separated from his or her genetic information, and the sample is identified by a numeric bar code. These bar codes are the only link connecting personal information, the biological sample and the DNA profile. The offender's personal information is kept in a separate registry maintained by the RCMP's Canadian Criminal Real Time Identification Services (CCRTIS), which NDDB employees cannot access. This process ensures that NDDB staff never know which convicted offender's DNA profile they are processing. Likewise, CCRTIS employees do not have access to the genetic information of an offender. With the exception of biological sex, DNA profiles held within the indices of the NDDB do not reveal any medical or physical information about the donor.

The offender's personal information is kept in a separate registry maintained by the RCMP's Canadian Criminal Real Time Identification Services (CCRTIS), which NDDB employees cannot access.

The Act further protects Canadians' privacy rights by requiring informed consent for submissions to the Relatives of Missing Persons Index, the Victims Index and the Voluntary Donors Index. This consent can be withdrawn at any time by the contributor. In addition, at least once every five years, the investigating agency is contacted about the case to ensure that the person from whom the DNA profile was obtained has not withdrawn their consent. Investigators are also asked whether they believe

the DNA profile will continue to assist in the investigation for which it was obtained. If removal is requested or if the investigating agency fails to respond, then the DNA profile is removed from the appropriate DNA index and the biological sample is destroyed.

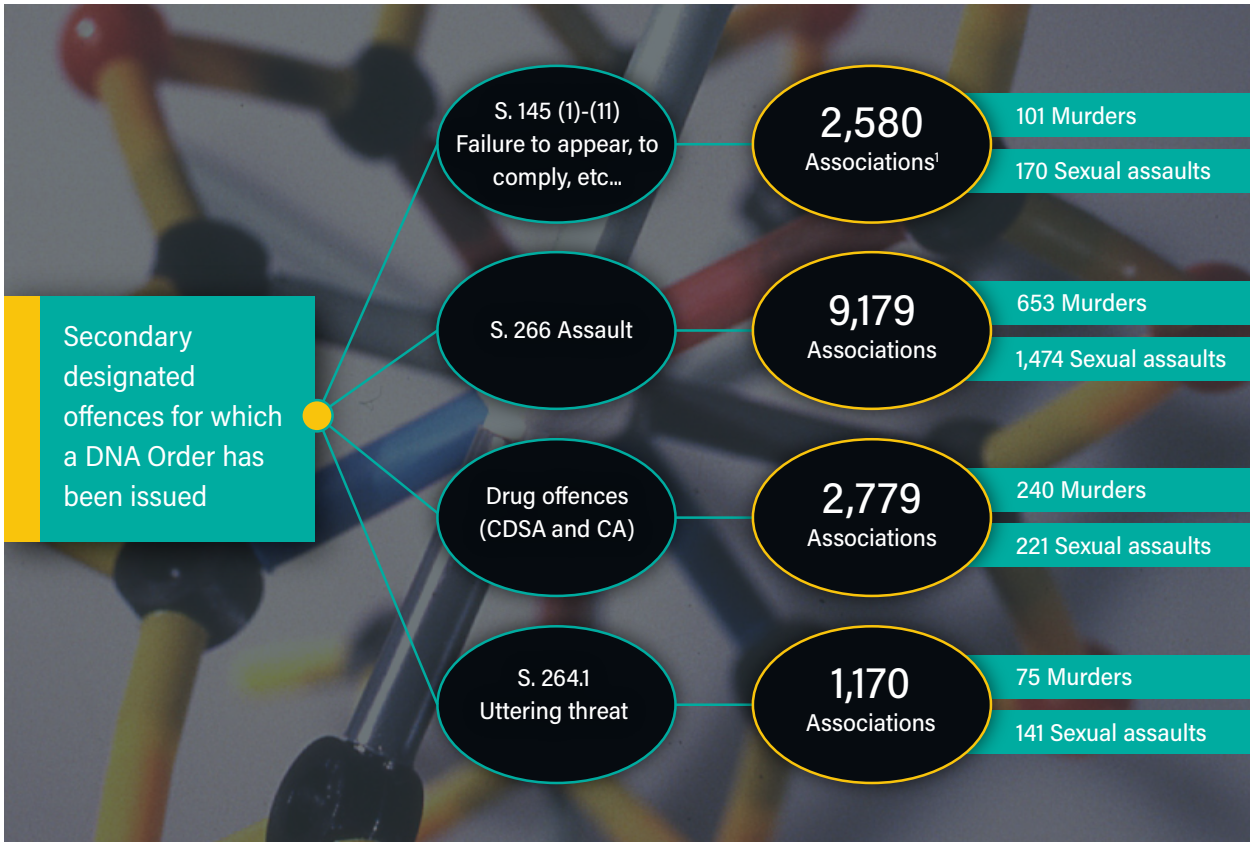
Lastly, the NDDB will only share DNA information with other investigative authorities as permitted by legislation.

THE VALUE OF SECONDARY DESIGNATED OFFENCE SUBMISSIONS

The *Criminal Code* classifies those offences that may be the subject of a DNA order as either primary or secondary designated offences. When the NDDB first started its operations in 2000, the number of secondary designated offences was limited. In 2008, the *Criminal Code* was amended and the list of secondary designated offences was expanded to include a wider range of offences (e.g., failure to appear and drug offences). While usually less violent, these offences can help solve more serious criminal offences.

*The **Criminal Code** classifies those offences that may be the subject of a DNA order as either primary or secondary designated offences.*

To illustrate the value of these offences, offender hit data was selected from the NDDB for a few common secondary designated offences. The figure below provides the number of offender hits to ongoing investigations (including murders and sexual assaults) that were the outcome of DNA orders being issued for offenders convicted of secondary designated offences.



[1] Associations refers to the number of Offender Hits.

SUCCESS STORIES

The NDDB provides information that is crucial for criminal and missing person investigations. DNA profiles of convicted offenders can help link or exclude suspects from a police investigation. Equally important is the database of unknown DNA profiles that have been processed from crime scenes. It can determine if a suspect is linked to one or multiple crime scenes regardless of where the crime took place. The NDDB has been a routine and vital resource in criminal investigations for over 20 years. Since 2018, with the adoption of its new humanitarian indices, the NDDB has proven valuable in humanitarian investigations as well. This year we've seen how the criminal and humanitarian aspects of the NDDB can overlap in providing investigative leads when the DNA profiles of two found human remains cases helped identify victims that were later linked to murder investigations.

The following examples highlight some of the many cases where DNA has been instrumental in helping solve or advance police investigations:

Familial DNA sample helps identify homicide victim, sixteen years after her disappearance

IN AUGUST 2004, a 27-year old woman was reported missing from Moncton, New Brunswick. The investigation indicated that she had been murdered but, her remains could not be located.

In 2009, a suspect was convicted of manslaughter in her death and sentenced to life in prison. The suspect told authorities where they could find the victim's remains but, the search was unsuccessful. The suspect then claimed that the remains had been moved by someone who had since passed away and there was no way of knowing where her remains could be found. While the offender was imprisoned, the case remained open for the lead investigator and for the family members who were still grieving and wanted answers.

In April 2012, the skull of an unidentified woman was found in a wooded area near Saint John, New Brunswick, about 155 km from Moncton. A DNA profile was developed, but at that time there was no National Missing Persons DNA Program (NMPDP) in place to support humanitarian investigations. It was not until December 2019, guided by the NMPDP, that the unidentified woman's DNA profile was added to the NDDB's Human Remains Index and searched against profiles in the Missing Persons Index and the Relatives of Missing Persons Index. However, no association was made to assist in the identification of the human remains. At this point, there was no evidence to indicate that these remains were that of the 27-year old woman who was murdered in Moncton.

Around this time, the lead investigator in the Moncton manslaughter case reached out to the NMPDP and arranged for a DNA sample from one of the victim's relatives to be uploaded to the Relatives of Missing Persons Index in the hopes that the victim's DNA profile had been added to the Human Remains Index and an association would be found. Upon entry into the Relatives of Missing Persons Index, the DNA profile of the victim's relative was flagged as a positive kinship association to the DNA profile obtained from the skull of the unidentified woman.

This was the first time the RCMP in New Brunswick used the NDDB to successfully identify remains through the use of familial DNA, giving the family much needed peace and closure.

No file is ever closed until it is solved. The New Brunswick RCMP would like to thank the families of the victim, as well as the RCMP's National Centre for Missing Persons and Unidentified Remains, the National DNA Data Bank, the Government of New Brunswick Coroner Services and the Saint John Police Force.

Cst. Hans Ouellette
New Brunswick RCMP

DNA used to prove identical twins' involvement in serious crime

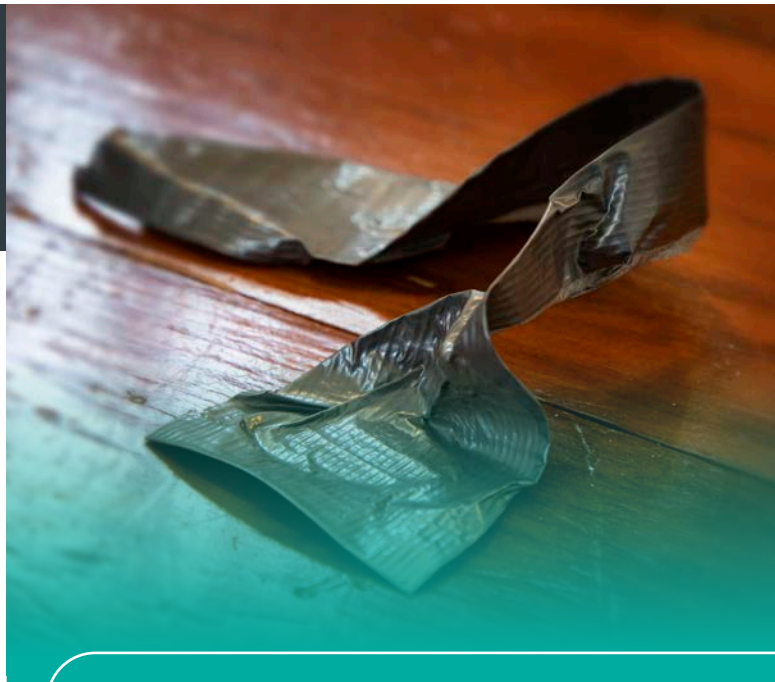
ONE WEEK AFTER a man was released from prison in Windsor, Ontario, police apprehended a number of suspects in his kidnapping, torture and murder. The victim, age 26, died a week after he was abducted, tied up, beaten and stabbed.

Two of the suspects being investigated were identical twins from Windsor, both of whom already had DNA on file as convicted offenders of a previous unrelated case. Investigators had video footage placing the twins at the scene but could not prove the siblings had a role in the crime.

Part of the evidence collected at the crime scene involved duct tape, which was used on the victim. When processing the evidence, the Centre of Forensic Sciences in Toronto generated a DNA profile from the duct tape and entered it into the Crime Scene Index of the NDDB. A search of the Convicted Offender Index revealed a match to the twins' convicted offender DNA profiles.

With conclusive DNA evidence in hand, investigators questioned the twins and both confessed to participating in the kidnapping. The DNA profiles of twins are identical and so the confession of each twin was an important component in the arrest of both siblings.

The identical twins were each charged with murder, forcible confinement and kidnapping. The twins pleaded guilty to kidnapping and were each sentenced to five years in prison for their roles in the crime.



The value of the National DNA Data Bank and DNA specifically cannot be underestimated. It provides conclusive information without the need of a witness. The accused now has to provide a reasonable excuse as to why their DNA is present at the scene of the crime. It is the proverbial smoking gun that cannot be refuted.

Staff Sergeant Edward Novak
Investigations - Major Crimes Branch
Windsor Police Service

Sexual predator targeting young women on a bike path

IN THE FALL OF 2017, a 41-year old male was arrested and charged in connection with a number of sexual assaults that took place on a bike path in Deux-Montagnes, Quebec, between 2012 and 2017. The man was a known offender on release from a previous conviction.

The arrest took place after an investigation into the latest attack of a young woman in August 2017. The 25-year old female fought her attacker. She bit him and was able to remove his watch during the struggle before he fled the scene.

Investigators compiled a list of sexual predators in the vicinity and started to narrow down leads.

During this process, they came across Facebook photos of the suspect wearing the same watch as the one left behind during the attack. Meanwhile, the watch was sent for DNA analysis and the DNA from the watch matched to the suspect's DNA profile in the Convicted Offender Index of the NDDB. This provided the first physical link of the suspect to the crime.

That crucial evidence led police to this serial predator and further investigation linked him to three previous assaults of young women biking on that path. Investigators also linked the same predator to a home invasion and an attempted sexual assault of an elderly woman.

The suspect pleaded guilty to several counts of sexual assault, forcible confinement, kidnapping and break and enter. He was sentenced to 12 years in prison.

As the burden of proof in a criminal case requires to be "beyond a reasonable doubt"; when DNA evidence can be gathered, like in this case, it will have a decisive impact on the investigative technique used such as the interview and on the confidence of guilt of the suspect. The NDDB gives a huge assistance to the investigators enabling them to link DNA from a possible suspect to the DNA gathered during their investigation.

Bruno Sicotte, Detective Lieutenant,
Régie de police du Lac des Deux-Montagnes

Suspect apprehended in Quebec home invasion

IN THE EARLY MORNING OF AUGUST 28, 2015, two armed suspects entered a home occupied by two men in Saint-Hippolyte, Quebec. The doors of the home were equipped with multiple locks and there were security bars on most of the windows, but the suspects allegedly entered the residence through an unsecured window.

Once inside, the intruders tied one of the victim's arms behind his back while pointing a handgun at his head. The suspects then went to the second victim's bedroom where a violent struggle took place. While fighting the suspects, the victim was able to remove the balaclava of one of his aggressors and banged his head against the wall and the counter. The second assailant struck the victim on the head twice with the butt of the handgun. The victim's dog then bit one of the suspect's legs. Ultimately, both suspects left the house, presumably through the same window they used to enter.

The police were called to the scene. Numerous pieces of evidence were gathered throughout the house, and around the window used to enter the house.

The evidence was sent to the forensic laboratory in Montréal for DNA analysis. Three months after the crime, investigators received a report from the laboratory confirming a match between the DNA profile from the balaclava found in the house and the DNA profile of a convicted offender in the NDDB. The suspect was taken in for questioning, and upon further investigation police noted scars similar to an animal's teeth marks on the inside of the suspect's right thigh. The suspect claimed he did not know how he got those marks.

DNA is the most effective investigative technique investigators have at their disposal. In this case, it would have been impossible to identify the suspect without DNA. In conclusion, the more subjects entered into the NDDB, the more successful investigators will be identifying possible suspects.

Francis Bolduc, Sergeant Investigator
Major crimes investigation division
Sûreté du Québec de Mascouche

The police had followed other leads; however, it was the DNA found at the scene of the crime that led them to one of the suspects. He was arrested on June 21, 2016 and later found guilty and sentenced to 68 months for break and enter, assault with a weapon, forcible confinement and disguise with intent. The second suspect is still unknown to date.

NATIONAL DNA DATA BANK ADVISORY COMMITTEE

Established in 2000 under the mandate of the *DNA Identification Act*, the NDDB Advisory Committee provides the NDDB with strategic guidance and direction on scientific advancements, matters of law, legislative changes, privacy issues and ethical practices. In addition, the Advisory Committee reports to the Commissioner of the RCMP on matters related to the NDDB operations and advises the Commissioner on a range of issues related to DNA ethics, scientific advancements and legislative changes. The members of the Advisory Committee are appointed by the Minister of Public Safety and collectively represent a diverse spectrum of expertise. The current members of the Advisory Committee are:

BRENDAN HEFFERNAN (CHAIRPERSON)
RCMP Chief Superintendent (retired), representing the police community.

DERRILL PREVETT, Q.C. (VICE-CHAIR)
Attorney (retired) and legal contributor, Crown Counsel for thirty-three years with experience in many high profile cases involving DNA evidence.

DR. FREDERICK R. BIEBER, PH. D.
Bio-Medical Ethics, Specialist and Associate Professor of Pathology at Harvard Medical School. Dr. Bieber is a medical geneticist at the Brigham and Women's Hospital in Boston, Massachusetts.

DR. RON FOURNEY, PH. D., O.O.M.
Director of Science and Strategic Partnerships, RCMP, and a founding member of the NDDB.

SUE O'SULLIVAN, B.A., O.O.M.
Human Rights Specialist, with extensive experience in advocacy for victims of crime.

DR. MICHAEL SZEGO, PH. D., MHSc.
Clinical Ethicist and Director of the Centre for Clinical Ethics. Dr. Szego is an Assistant Professor, Department of Family and Community Medicine and Dalla Lana School of Public Health at the University of Toronto.

DR. BEN KOOP, PH. D.
Medical Genetics Expert and Professor of Biology at the University of Victoria.

LACEY BATALOV (REPRESENTED BY ALEXANDRA FOSTER)
Representing the Privacy Commissioner of Canada.

For more information about the Advisory Committee's role, please visit the NDDB Advisory Committee website: http://www.rcmp-grc.gc.ca/dnaac-adncc/index-eng.htm.

KEY STATISTICS

Biological samples: June 30, 2000 through March 31, 2022
Endorsements: January 1, 2008 through March 31, 2022

The global pandemic continued to impact the volume of submissions to the NDDB throughout 2021/22.

TABLE 1 – DNA Profiles Contained in the Criminal Indices

Convicted Offenders Index (COI)	425,567
Crime Scene Index (CSI)	196,827
Victims Index (VI)	84
Voluntary Donors Index (VDI)	0
TOTAL	622,478

TABLE 2 – DNA Profiles Contained in the Humanitarian Indices

Missing Persons Index (MPI)	155
Relatives of Missing Persons Index (RMI)	1,162
Human Remains Index (HRI)	307
TOTAL	1,624

Biological Samples Received versus DNA Profiles Contained in the Convicted Offenders Index:

As of March 31, 2022, the NDDB received 472,207 biological samples, of which 425,567 DNA profiles were contained in the COI. The difference of 9.9 % can be attributed to rejected samples, duplicate samples, biological samples in the process of being analyzed and DNA profiles removed from the COI because of an absolute or conditional discharge, expired retention period, or because the conviction or the DNA order/ authorization was quashed on appeal.

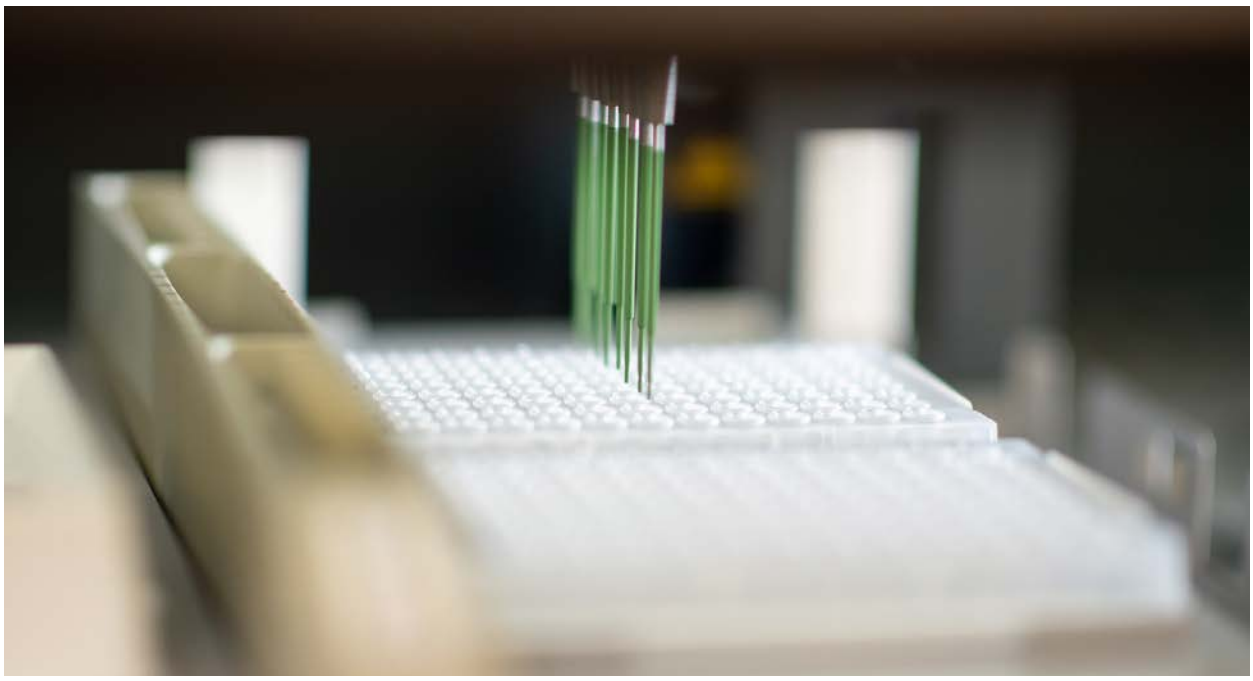
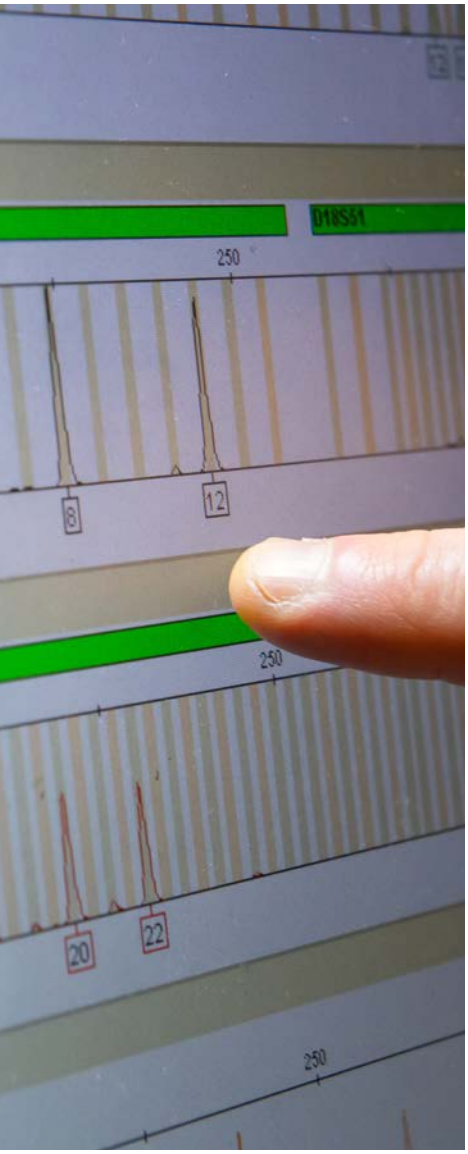


TABLE 3 – Breakdown of DNA Profiles Contained in the Crime Scene Index	
Centre of Forensic Sciences	76,836
Laboratoire de sciences judiciaires et de médecine légale	53,475
RCMP National Forensic Laboratory Services	66,516
TOTAL	196,827

[1]Does not include duplicate samples identified prior to laboratory analysis.

TABLE 4 – Matches and Associations Reported	
Offender Hit	71,570
Forensic Hit	7,802
Victim Hit	9
Human Remains Hit - Putative identification	40
Humanitarian Index Hit - Investigative lead	15
Offender Duplicate [1]	14,963
Identical DNA Profiles	407



EXPLANATORY NOTES

Offender "hit": A DNA profile developed from crime scene evidence and entered into the NDDB's Crime Scene Index matches a DNA profile in the Convicted Offenders Index.

Forensic "hit": A DNA profile developed from crime scene evidence and entered into the NDDB's Crime Scene Index matches another crime scene DNA profile in the Crime Scene Index.

Victim "hit": A DNA profile developed from a victim and entered into the NDDB's Victims Index matches a DNA profile in another index.

Human Remains "hit"- putative identification: A DNA profile developed from a human remain and entered into the Human Remains Index matches or is associated to a DNA profile(s) in the Relative of Missing Persons Index, the Missing Persons Index or the Convicted Offenders Index.

Humanitarian Index "hit" - investigative lead: A DNA profile developed from a human remain and entered into the Human Remains Index or a DNA profile developed from a personal effect of a missing person and entered into the Missing Persons Index matches to a crime scene DNA profile in the Crime Scene Index.

Offender Duplicate: Cases where two biological samples from the same person were submitted to the NDDB.

Identical DNA Profiles: DNA profiles of identical twins.

Convicted Offender's Profile: A DNA profile from an offender convicted of a designated offence.

Crime Scene Profile: A DNA profile developed from biological evidence found at a crime scene.

TABLE 5 – Offender Hits by Case Type	
Break and Enters	31,171
Robberies	7,751
Sexual Offences	7,361
Assaults	5,723
Homicides	4,688
Attempted Murders	1,395
Other	13,481
TOTAL	**71,570**

TABLE 6 –Convicted Offender Submissions Received – Breakdown by Category of Offence		
	Biological Samples	Endorsements
Primary	251,043	88,579
Secondary	217,237	111,088
Other	3,927	1,224
TOTAL	**472,207**	**200,891**

NOTE: The "Other" category includes samples submitted following conviction for a non-designated offence or without a DNA court order. These submissions are not processed unless the NDDB receives a corrected order.

Primary and Secondary Offences: See section 487.04 of *Criminal Code* of Canada and section 196.11 of the *National Defence Act*.

TABLE 7 – Convicted Offender Submissions Received – Breakdown by Type of Offender		
	Biological Samples	Endorsements
Adult Offender	415,311	193,583
Young Offender	56,783	7,300
Military Offender[1]	113	8
TOTAL	**472,207**	**200,891**

[1] A member of the military convicted of a designated offence and had a biological sample/endorsement submitted to the NDDB.

TABLE 8 – Convicted Offender Submissions Received – Breakdown by Type of Offence		
	Biological Samples	Endorsements
Assaults	288,151	132,157
Sexual Offences	100,724	14,839
Break and Enters	66,070	41,097
Robberies	53,528	22,420
Controlled Drugs and Substances Act and *Cannabis Act*	44,082	18,600
Homicides	10,549	2,460
Other	74,886	63,345
TOTAL	**637,990**	**294,918**

NOTE: More than one offence may be associated with a sample submission.

TABLE 9 – Convicted Offender Submissions Received by Province/Territory				
	April 1, 2021 to March 31, 2022		June 30, 2000 to March 31, 2022	
	Biological Samples	Endorsements	Biological Samples	Endorsements (from Jan 1st, 2008)
British Columbia	1,354	1,064	52,982	22,182
Alberta	1,721	1,479	51,002	21,126
Saskatchewan	797	540	20,338	4,899
Manitoba	761	868	28,685	11,654
Ontario	6,978	7,118	207,221	113,928
Quebec	2,921	1,349	80,150	19,613
New Brunswick	272	144	6,242	919
Nova Scotia	212	120	11,958	3,074
Prince Edward Island	41	13	1,296	144
Newfoundland & Labrador	156	104	6,509	1,519
Yukon	37	21	872	270
Northwest Territories	58	41	2,518	901
Nunavut	89	48	2,434	662
TOTAL	15,397	12,909	472,207	200,891

NOTE: The above information represents the convicted offender submissions received and is not reflective of the number of convictions eligible for a DNA order.

RETROACTIVE AUTHORIZATIONS

This is a biological sample taken from an offender who was found guilty of certain designated *Criminal Code* offences before June 30, 2000. The authorization is granted as per qualifying criteria set out in s.487.055 of the *Criminal Code*. Under this provision, the NDDB has received 5,035 submissions.

REJECTION OF NDDB SUBMISSIONS

The NDDB has rejected only 7,277 (1.5 %) of the biological samples and 2,892 (1.4 %) of the endorsements it has received to date. Reasons for rejection include: the offender was convicted of a non-designated offence, the biological sample was inadequate, the collection kit used was inappropriate (sample), the offender's DNA profile was not contained in the COI (endorsement), or the DNA order was missing or invalid.

COLLECTION OF ADDITIONAL BODILY SUBSTANCES

If a biological sample is rejected because the quality of the sample is deemed inadequate for DNA analysis, or if it was not submitted in accordance with the *DNA Identification Regulations*, an application for resampling can be authorized by a judge. Since June 30, 2000, the NDDB has received 1,967 samples taken under this provision.

TABLE 10 – Breakdown of Biological Samples Destroyed and DNA Profiles Removed from the Convicted Offenders Index

	ADULT	YOUNG PERSON
Conditional discharge (repealed for adults as of March 6, 2018)	11,287	2,128
Conviction quashed on appeal	879	31
Absolute discharge (repealed for adults as of March 6, 2018)	592	132
Duplicate sample (same order)	373	34
No suitable DNA profile obtained	146	21
Order/authorization quashed	47	8
Retention period expired	N/A	8,987
Other	73	11
TOTAL	13,397	11,352

N/A: Not applicable

TABLE 11 – Summary of NDDB Indices and Associations Made

	2017/18	2018/19	2019/20	2020/21	2021/22
Total Number of CSI DNA Profiles at Year-End	143,963	159,448	173,292	184,549	196,827
Increase in CSI DNA Profiles[1]	13,863	15,485	13,844	11,257	12,278
Total Number of COI DNA Profiles at Year-End	365,565	384,488	401,546	411,999	425,567
Increase in COI DNA Profiles[1]	19,405	18,923	17,058	10,453	13,568
Submissions received (biological samples and endorsements)	40,394	38,898	37,447	23,181	28,306
Associations made (Offender and Forensic Hits)	5,751	7,291	6,857	4,327	5,622

[1] Net increase after rejections and removals from indices.

FINANCIAL STATEMENT[1]

April 1, 2021 – March 31, 2022	
EXPENDITURE TYPE	EXPENDITURE ($ thousands)
Personnel	2,701
Internal Services	746
Employee Benefit Plan	469
Transport and Telecommunications	5
Development and Infrastructure Support	14
Rentals	171
Repair and Maintenance	13
Utilities, Materials, Supplies and Miscellaneous	1,020
Capital and Minor Equipment Purchases	416
Sub-total	**5,555**
Allocated Indirect Costs[2]	217
Total	**5,772**

[1] The financial statement includes costs for the National Missing Persons DNA Program as it applies within the National DNA Data Bank.

[2] Indirect Costs include: Forensic Science and Identification Services administrative and corporate support, recruitment, the Quality Assurance Program, IT support and the National DNA Data Bank Advisory Committee.